KENT
COAST
COLOUR
LIGHT
PROGRAMME

See Advert. Page 14

MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

VOL. LXXX No. 2082 [Registered at the G.P.O. as a newspaper] LONDON, FEBRUARY 21, 1959 PRICE NINEPENCE

RAILWAY
REFRESHMENT
CAR
SERVICES IN
BRITAIN

See Page 3

CURRENT TOPICS

Appointments to the Commission

YEARS ago two boys, Grand and Russell, were in the same house together at Rugby. Since 1948 both have been in the service of the British Transport Commission and now by coincidence their names are linked in the same announcement by appointment as members of the Commission. Mr. K. W. C. Grand has been in railways for 40 years, having joined the Great Western Railway in 1919. For over a decade he has been in charge at Paddington as chief regional officer and then general manager of the Western Region of British Railways. An outline of his distinguished career appears on page 9. He goes to the Commission now to fill the vacancy created by the death of Mr. J. W. Watkins. In the autumn, to replace Lord Rusholme, who is retiring, Major-General G. N. Russell will become a member of the Commission; for the first time a man of special experience in road haulage will join in the deliberations at 222 Marylebone Road as a member. General Russell's career in the Royal Engineers led him to the post of Deputy Quartermaster-General for Movements in India in the 1939-45 war and then to become Transport Adviser to the Special Commissioner for South East Asia until he was appointed chairman of the Road Transport Executive in 1948. Under his guidance British Road Services has been successfully built up out of 4,000 independent concerns and has survived without loss of efficiency the changes of the 1953 Act. Since 1957 he has also been a member of the Eastern Area Board of the B.T.C. He is serving this year as president of the Institute of Transport. Both the new members of the Commission are original thinkers, have great experience of men and affairs and are forthright in their views. They should be assets to its deliberations.

Street Lighting and Accidents

WHEN the lighting officer of the Electrical Development Association, Mr. W. Robinson, spoke recently at Cambridge to a meeting of the Eastern Accident Prevention Association, he emphasised the increasing influence of road lighting upon accident rates. Whereas there were 3,374 road deaths in daylight in 1958 compared with 3,893 twelve years previously, the number of deaths after dark rose from 1,656 to 2,596. Over the same period serious injuries after dark had increased by 100 per cent, whereas those in daylight had risen by 55 per cent. It had been established with reasonable certainty that the overall effect of relighting the many roads investigated was that accidents were reduced by 30 per cent. He advocated the provision of a co-ordinated system of main road lighting throughout the country. This could well be achieved if street lighting were brought into the improvement grants scheme which applies to the highways it serves. A good example of the confused state which could exist at present was to be found in the North Circular Road. This ran through no fewer than 13 local authority areas in which expenditure on street lighting ranged from 4s. 5d. to 16s. 7d. per head. It was hardly surprising that, until recently, there were a dozen different lighting systems over the 20-mile length of this important through route.

Signs of Industrial Recovery

THE trend towards industrial recovery, upon which the fortunes of transport operators must largely depend, is confirmed by the results of the latest industrial inquiry made by the Federation of British Industries. The number of firms reporting an increase in the rate of new orders outweighs those reporting decreases for the first time since these inquiries were instituted. The balance of opinion about the future changed for the better in the Federation's third inquiry, which was taken in October. "The current inquiry suggests that there was some foundation for this change of opinion," states the F.B.I. Not only do a greater number of firms report increases in new orders than those reporting decreases, but a similar balance of increases is shown in the reports on levels of output. This follows two periods in which declines outnumbered increases. Even allowing for a certain amount of optimism, which may have influenced the returns, it is apparent that the business climate has been changing for the better over the last four months. Nevertheless, there is still no sign of any impulse towards spending much more on capital equipment. There is a warning also that unemployment is unlikely to decrease in the same proportion as the anticipated rise in output. "There are indications," the F.B.I. states, "that in many cases output is expected to rise without an increase in the labour force." This is largely explained by the fact that 79 per cent of the firms questioned still report that output is running below capacity. It is also significant that revival in the capital goods trades, on which any sustained recovery will ultimately have to depend, is not yet apparent. In answer to the query: "In general, do you find that getting the labour you want today is more, or less, easy than it was four months ago?", 50 per cent of the firms answered "More," 46 per cent "Same" and 3 per cent "Less."

LEADING FEATURES IN THIS ISSUE

	PAGE
Portrait	
Mr. K. W. C. Grand, M.Inst.T.	9
Special Articles	
Fuel and Public Service	2
Railway Refreshment Cars: Some British Railways Records	3
Joint Distribution Fleet Gives Good Service: The Reckitt-Colman-Chiswick Organisation	5
Floor Maintenance: Range of B.V.C. Equipment	6
A 1,100-h.p. Export Diesel Locomotive for Lightweight Tracks	7
Road Signs and Bridges: Revised British Standards	9
Bulk Cement Delivery to Plant: Conveyor Discharge from Barge	10
New Cab for Karrier Bantam	10
Transport Costs and Policy. By H. E. Osborn	11
T.E.E. Set at Brussels	14
Monorail Proposed for Seattle Exhibition	14
Modern Airways Section	
Transatlantic Traffic Growth	13
Visual Aid to Air Safety	13
Regular Features	
Commercial Aviation	9
Financial Results	16
Forthcoming Events	2
Important Contracts	16
In Parliament	9
Letters to the Editor	12
Lorry, Bus and Coach News	4
News from All Quarters	8
Shipping and Shipbuilding	16
Social and Personal	15
Tenders Invited	4

Inspection of Heavily Used Track

THE need for careful and constant inspection of heavily used track is emphasized by Colonel W. P. Reed, inspecting officer of railways, in his report on a derailment which occurred on August 12, 1958, at Borough Market Junction, Southern Region, British Railways. Travelling slowly over a set of badly worn switches on the up local line where the routes to Charing Cross and Cannon Street diverge, the 6.52 a.m. 10-coach Sanderstead—Cannon Street electric train became derailed at the eighth coach. There were no serious injuries but serious traffic dislocation ensued throughout the day. The condition of the points had not been overlooked by the permanent way inspector, but he is considered to have made a serious error of judgment in not renewing them some time earlier. Two features are mentioned in the report. The first was the side-cutting of the stock rail throughout its length, which meant that the top of the switch rail had no lateral support when closed against the stock rail; the second was the complete disappearance of the joggle on the running edge of the stock rail, exposing the blunt end of the switch rail and allowing it to be battered by the flange of the leading outer wheel on each bogie on every train travelling towards Cannon Street. This process caused the head to be chipped and broken away over about the first two feet of the switch rail so that a rough ramp was developed. "Apart from this excessive wear in general of the switch and stock rail," states the inspecting officer, "the absence of the joggle on the running edge was a noticeable danger sign which Inspector Drane did not appreciate." He suggests that the significance of such wear should be drawn to the notice of engineering staff.

Steel and Civil Engineering

IN his remarks at the annual general meeting of Dorman, Long and Co., Limited, Sir Ellis Hunter, the chairman, said that no one could assess the duration of the present contraction in steel consumption; there was no doubt that in the longer term the expansion in the demand for steel would be resumed. The needs of the country's capital investment programme were so urgent in the early nineteen-fifties that the Government recommended the use of substitute materials where practicable in place of structural steel. Those conditions no longer applied. Additional structural steel making capacity had been created and abundant supplies of steel were available. It was not inappropriate to remind the railways that the steel industry was one of their best customers, and that the railways could help themselves by using steel in preference to alternative materials which provided them with much less freight. The Government's intention of spending £60,000,000 per annum on new roads and bridges would place a severe strain on civil engineering capacity. If it were to be effectively carried through, wide use must be made of the resources available from the steel industry and of the services of bridge and constructional engineers using steel. There was a wealth of technical skill and experience here which could make a valuable contribution, and the structural work involved would be greatly accelerated, particularly now universal beams were available. These advantages, it may be added, have already been demonstrated in the United States and quite recently in this country in bridges on the Catterick by-pass, where Dorman Long universal beams were used.

Refrigerated Cargo Liners

IN the Institute of Transport Shipping Lecture this week Mr. F. E. Harmer, chairman and managing director of the New Zealand Shipping Co., Limited, dealt with the refrigerated cargo liner. The forerunner of the modern refrigerating machine appeared in 1834. Some 27 years passed before T. S. Mort opened the first frozen meat works in the world in Sydney, New South Wales. The first recorded shipment of meat under refrigeration was in 1873; the meat was packed in tanks of ice in Australia but went bad through the tanks leaking. But one must suppose it could not have survived the passage through the tropics in any event. The chilled meat trade from the United States to Europe began in 1874 with ice tanks and the use of refrigerating machinery on ships that traversed the equator began three years later. Countries such as New Zealand at last had an outlet for the surplus meat and butter that was eagerly sought in the older and more crowded countries. Although the dairy produce trade is now so important it was the surplus meat in the new countries and the intense demand for it in Europe which brought about the origin of this aspect of the shipping industry, the importance and methods of which were amply shown.

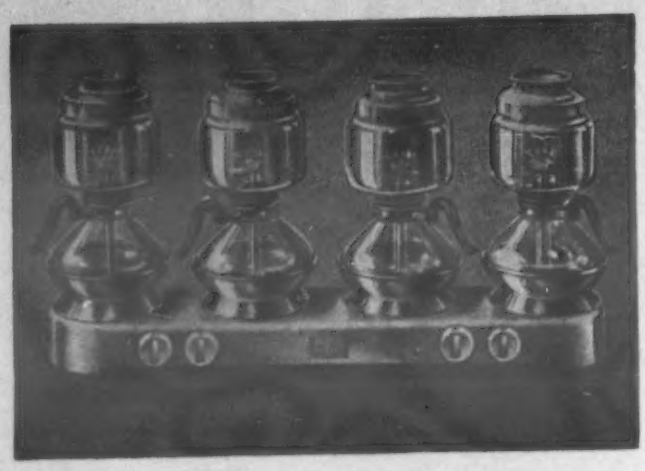
Criticism Can Become a Habit

A NEW champion of the railways steps forward in the person of Sir Philip Warter. Although he is chairman of the Southern Area Board and a member of the B.T.C., as a prominent business man his views may perhaps be regarded as more independent and without the bias that might be attributed to those of a railwayman. Replying in the *Sunday Times* to editorial strictures he admits it would be idle to pretend there is nothing wrong, but he points out that the present position, which calls for modernisation, is "in fact the direct result of a long period of neglect and financial starvation." A certain measure of erratic timekeeping is inevitable where modernisation is being pressed ahead, but "the line traffic manager is keeping his public very closely informed of everything he is doing and is putting out a monthly report showing in detail all the works involved." Although many things call for improvement, "we cannot improve all of them, everywhere at once." And whilst criticism of faults and deficiencies on the part of the staff is quite wholesome, "credit should be given for what they are doing, otherwise much of the progress that is being made in staff relationships will be destroyed." Sir Philip refers to big improvements already made and the marked increase in traffics following, for instance, the dieselisation of local services in the North, Midlands, Eastern Counties and Hampshire, the increase in express freight services and mechanisation of goods depots. "Dismal cafés and buffet counters" was another of the allegations which he refutes, and rightly so as one must be blind not to have noticed improvements in the refreshment rooms up and down the country. In fact, one wonders sometimes whether those who denunciate the loudest ever go near a railway and in criticising are merely indulging in a popular habit. Sir Philip Warter and his colleagues on the Commission are at least entitled to expect "a more balanced picture" from a serious national newspaper.

Telling the Customers

ELECTRIFYING and modernising the 235 miles in hand on the South Eastern Division of the Southern Region of British Railways is a complex task, which has so far caused a good deal of delay to the present train service; this has grown worse as the final stages of the first phase of 78 route-miles are tackled during a winter which has been prolific in fogs and freeze-ups. The public relations department of the Southern is now issuing regularly to passengers affected *South East Report*, a monthly news bulletin which contains straightforward explanations of the work being carried out and a message from Mr. P. A. White, the line traffic manager, who points out that the only reasonable way of carrying out the £45 million job is to hurry on as rapidly as possible despite its serious effect on timekeeping. Neither closing down this extremely busy railway nor spreading the work thinly over a long period of years are tenable propositions. Mr. White firmly points out that there is no question of "inefficiency." He says: "We are ordinary, sensible people on the railways and late trains mean more work and trouble for us as well as you. But we believe that you need the better and more efficient railways we are building." This is good public relations work and should give the detractors of the Kent Coast service something to think about.

TRAVEL WITH CONA
. . . travel with pleasure



A cup of coffee at the right time makes travelling a pleasure. Indeed, a cup of coffee is a pleasure at any time provided it is properly made.

More and more of the best restaurants, hotels and bars know that perfect coffee is made the CONA way. And in railway refreshment bars, restaurant cars, airport bars and the finest passenger ships, people can enjoy the pleasures of CONA.

Made of flameproof glass, CONA coffee makers keep the drink at the right temperature and ensure against undercooking and overboiling.

CONA pioneered the all-glass method of making coffee to guard against metal contamination. It has remained the supreme way of making coffee for over fifty years.

For the touch of comfort that makes the journey a real pleasure, relaxed and comfortable, you need **CONA.**

Get full details from:

CONA COFFEE MACHINE COMPANY
Est. 1850

Head Office and Demonstration Showrooms:
FELDEN WORKS, RAILWAY PLACE, LONDON, S.W.19
Tel: LIBerty 7277/9 Grams: Ozonised Wimble London

TRADE MARK

Birfield

comprehensive manufacturing facilities for

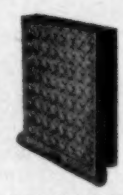
CASTINGS
FORGINGS
PRESSINGS
FILTERS
and other railway equipment

Famous engineering companies make up the Birfield Group: Laycock Engineering Limited, Hardy Spicer Limited, Forgings and Presswork Limited, The Phosphor Bronze Co. Ltd., The Vacuum Brake Co. Ltd., and Intermit Ltd., are some of the Birfield companies that are well known in railway engineering. With the newest techniques, modern manufacturing plant, and immense facilities for research, the unparalleled resources of the whole Birfield Group are implicitly at your service when you get in touch with any one of the individual companies.

LAYCOCK ENGINEERING LTD.
Railway Division, Millhouses, Sheffield 8
The Railway Division of Laycock Engineering manufactures the Laycock-Sprague Air Push Windscreen Wiper

THE PHOSPHOR BRONZE CO. LTD.
Bradford Street, Birmingham 5
White metal and other bearings are a speciality of this Company, in addition to non-ferrous and ferrous alloy castings

FORGINGS AND PRESSWORK LTD.
Birch Road, Witton, Birmingham 6
Trunnion bracket forging produced to the design of British Railways (Engineering Division)



INTERMIT LTD.
Bradford Street, Birmingham 5
Rotonamic air filters, for protection of diesels and other reciprocating machinery, operate at efficiencies in excess of 99%

THE VACUUM BRAKE CO. LTD.
Stratford House, Stratford Place, London, W1
All components of the world-famous VB equipment are made within the Birfield Group. This ejector casting was produced by Phosphor Bronze Ltd.

HARDY SPICER LTD.
Birch Road, Witton, Birmingham 6
Cardan shaft with needle roller bearing type universal joints. This is one of a comprehensive range

Enquiries direct, or to RAILWAY DIVISION
BIRFIELD INDUSTRIES LTD., STRATFORD HOUSE, W.1 Phone: GROsvenor 7090

MODERN TRANSPORT

Published Every Friday
RUSSELL COURT, 3-16 WOBURN PLACE, LONDON, W.C.1

Telephone Number: TERminus 0303 (3 lines)
Telegraphic Address: Transpubco, Westcent, London

ANNUAL SUBSCRIPTIONS
BRITISH ISLES, 35/-; CANADA, 32/6;
ELSEWHERE ABROAD, 35/-
payable in advance and postage free

The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Fuel and Public Service

FOLLOWING an interview last month with the Economic Secretary to the Treasury, the Municipal Passenger Transport Association, Passenger Vehicle Operators Association, Public Transport Association and Scottish Road Passenger Transport Association submitted, on February 12, a memorandum setting out the reasons why they are pressing for abolition of duty on fuel oil used in buses and coaches and for the abolition or reduction to £12 10s. of excise duty licence fees on public service vehicles. It is not, of course, the first time upon which such an approach has been made and, indeed, the representations are becoming almost an annual event. That is not, however, to decry their importance in any way. The situation which the concessions now sought would alleviate has deteriorated steadily. The cuts already made in particularly unremunerative services have borne especially severely upon rural areas with consequent repercussions upon life in remote country districts, and, in turn, on agricultural labour problems. The reduced profit-earning ability of the more remunerative routes has diminished the number of non-paying routes which operators can afford to sustain and a factor which is steadily growing in importance concerns the replacement of passenger train facilities where these are withdrawn. Few, if any, of these bus operations are likely to be self-supporting and not all of them are undertaken by concerns which the British Transport Commission is prepared to subsidise. It has long been accepted that many road passenger transport undertakings lose on the operation of the majority of their stage carriage services, although the extent of the loss naturally varies with the type of area served. They have managed for many years to offset such losses largely from profits earned on excursions, tours and private hire work.

Impracticable Suggestions

CIRCUMSTANCES have changed and the surplus which these sources can contribute has decreased—a process hastened by the very bad summer weather which has been experienced in the past few years. The potential traffic has, moreover, been affected by the private car. More holidaymakers make their own way about in their own transport, while more sports teams are carried in the cars of players or supporters and call less frequently for hired coaches. There will be general sympathy with the point made in the memorandum that "the Government is apparently willing to listen to any and every suggestion which only 'plays with the problem' rather than take the one step that would do any real good." This comment follows some succinct remarks about proposals for the use of microbuses or postal vans. It is considered that such methods afford no solution whatever to the problem. Although a great deal has been done to economise by means of one-man buses, lightweight vehicles, larger-capacity double-deckers, and the increased use of thin oils, there is a limit to what can be achieved. The same vehicle needed to handle the sparse off-peak traffic is required also for the peak periods and, more often than not, it is more economical to use a double-decker with a two-man crew for both types of service. The Treasury objection that differentiation between fuel oil for buses and that for other vehicles would be impracticable is not accepted and it is added that what the Republic of Ireland has done for some years, without apparent difficulty, should be quite as simple in Britain, especially in the light of the close scrutiny of operators' fuel records by Customs and Excise.

Coal and Oil

SUPPORT for the bus operators has emerged from a somewhat unexpected quarter since the notion that less tax should be charged on diesel fuel for road vehicles and more on fuel oil intended for furnaces is one of the proposals contained in a national fuel policy document prepared by a sub-committee of the executive of the National Union of Mineworkers and approved unanimously last week by the executive. Reviewing the proposals—another is the nationalisation of coal distribution—Mr. Ernest Jones, president of the union, said that the whole emphasis of fuel policy should be to rely more on indigenous resources, namely coal. The miners believed that the use of nuclear energy was in the interests of the nation and should be encouraged, but the industry was new and depended on experiment rather than experience. The miners, he said, agreed that nuclear power stations under construction should be completed and put into use, but thought that those still in the planning stage should not be built until practical experience had been gained, especially as there was enough fuel of other types available. But are the miners the best judges in this case? Their attitude has been likened to that of King Canute, but he was a highly intelligent man who set out to show fulsome courtiers that the tide was irresistible; he would probably have refrained from urging cancellation of the projected conversion to oil of two more power stations additional to the two at which, at the miners' behest, conversion has been postponed. The representatives of the miners are on surer ground when they advocate an urgent need for better and more economical coal distribution. The shortage of smokeless fuels at a time when Government policy demands smokeless zones is evidence of a malaise in administration. A further demand for a halt to the closure of uneconomic pits is likely to be made when this fuel policy statement is submitted for discussion at a national miners' conference on February 27.

Staving Off Fare Increases

A GOOD deal is made in the memorandum put forward by the bus operators' associations of the inequitability which results from the fact that British Railways pays no tax on the diesel fuel for its trains and that these trains are abstracting traffic from the buses. It is added that the railways are also getting large loans which are hardly distinguishable from subsidies. It could be argued that these points are less strong than those which concern the maintenance or restoration of bus facilities, but the memorandum hastens to add that there is no intention of suggesting that the railway fuel should be taxed. Elimination of the tax of 2s. 6d. per gallon would cost the Government £30 million annually and reduction of the licence fees to £12 10s. would amount to a further £5 million. It is doubtful whether such savings would enable operators to reduce fares, but it could well relieve them of the need to seek immediate increases to balance the increased costs which now confront them. A saving of 3d. a vehicle-mile may seem relatively small, but it could make a world of difference to the financial situation of undertakings which have received only one reward—and a back-handed one at that—for their labours towards the common weal. That was in the last Budget when there was a 233⅓ per cent increase in their profits tax. The operators cannot be blamed for feeling that the Government has failed completely to appreciate the serious state in which the industry is placed.

Forthcoming Events

February 21.—Omnibus Society (Northern). Paper by Mr. T. A. Dalton, "Transport in Carlisle and Cumberland." At Y.M.C.A., Newcastle. 6.30 p.m.

Railway Club. Visit to disused tube station and tunnel at King William Street.

February 23.—Railway Correspondence and Travel Society (Northampton). B.R. films. At Liberal Club, Castilian Street, Northampton. 7.30 p.m.

Institution of Railway Signal Engineers (Bristol). Informal meeting. "Any Signalling Questions?" At Bristol Temple Meads Station. 6 p.m.

February 24.—Institute of Transport (Metropolitan G. and S.). Paper by Mr. J. E. Colpus, "Shipowners and Types of Ships—with a Look at Six Different Vessels." At 80 Portland Place, W.1. 6.15 p.m.

Institute of Transport (Leeds G. and S.). Paper by Mr. T. Thornton, "British Waterways." At Offices of Leeds City Transport Department, 1 Swinegate, Leeds, 1. 7 p.m.

Omnibus Society. Paper by Mr. N. H. Dean, "My First 17 Years of Managership." At Victoria Coach Station, S.W.1. 6.45 p.m.

Railway Correspondence and Travel Society (East Midland). Paper by Mr. R. Dyer, "A Somerset Mixture." At N.C.S. Guild Rooms, Toll Street, Nottingham. 7.30 p.m.

Institution of Mechanical Engineers (Automobile Division). Discussion, "Safety Features in Vehicle Design." At 1 Birdcage Walk, S.W.1. 6 p.m.

February 25.—British Railways (Southern Region) Lecture and Debating Society. 1959 Continental Tour Film night. At Chapter House, St. Thomas Street, S.E.1. 5.45 p.m.

February 26.—Association of British Travel Agents. Annual general meeting. At Royal Festival Hall. 2.30 p.m.

Institution of Electrical Engineers. Annual dinner. At Grosvenor House, Park Lane, W.1. 7.30 p.m.

Institution of Railway Signal Engineers (Glasgow). Paper by Mr. G. I. Foster, "Relay Remote Control Systems." At St. Enoch Hotel, Glasgow. 6 p.m.

February 27.—Institution of Locomotive Engineers. Annual luncheon. At Dorchester Hotel, Park Lane, W.1. 1 p.m.

Institute of Road Transport Engineers (North Eastern Centre). Annual dinner and dance. At White Horse Hotel, Harrogate Hill, Darlington. 7.30 p.m.

February 28.—Railway Correspondence and Travel Society. Paper by Mr. C. Smith, "The Railways of Switzerland." At Railway Hotel, Brighton. 7 p.m.

Light Railway Transport League. Paper by Mr. I. Yearsley, "Manchester's Neighbours." At Fred Tallant Hall, Drummond Street, London, N.W.1. 6.30 p.m.

March 2.—Institute of Transport (Metropolitan). Paper by Mr. G. F. Sinclair, "Engineering in Transport." At 80 Portland Place, London, W.1. 5.30 for 6 p.m.

March 3.—Institute of Transport (Midland). Paper by Mr. S. Bowskill, "The Transportation and Handling of Heavy Equipment." At Birmingham Exchange and Engineering Centre. 6.30 p.m.

Institution of Civil Engineers. Paper by Mr. H. E. Sadler, "Development in Overhead Electrification of Railways as it Affects the Civil Engineer." At Great George Street, London, S.W.1. 5.30 p.m.

Permanent Way Institution (Leeds and Bradford). Paper by Mr. J. C. Loach, "Effect on the Track to be Expected from the General Introduction of Diesels and Electrics." At British Railways Social and Recreation Club, Leeds City Station. 7 p.m.

Institution of Railway Signal Engineers (York). Film and talk on cable laying technique. At Signalling School, Toft Green, York. 5.30 p.m.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

RAILWAY REFRESHMENT CARS

From Restaurant to Cafeteria

SOME BRITISH RAILWAYS RECORDS

One of the new kitchen-buffet cars designed for British Railways

NO business is quite so exacting as that of providing meals on a moving train. There are large numbers of passengers requiring service, the time is strictly limited and, above all, the space in which the staff have to work is closely restricted. The Ministry of Health deems 10 ft. by 10 ft. or 100 sq. ft. to be the minimum space suitable for a domestic kitchen, from which perhaps two or possibly six or so meals are to be served. On a restaurant car a kitchen measuring 6 ft. 4 in. wide by 14 ft. 9 in. long—area 93½ sq. ft.—has to be used for producing 124 meals to a tight schedule. Many successful dining-car designs provide even less space.

It is not generally known even among railway staff that by and large this country is the most successful in the world in coping with passengers who want some sort of meal on trains. By comparison with most other administrations meals on British Railways are inexpensive; the regular services provided are by far the most intensive in Western Europe, although differing widely in demand according to the type of traffic attracted to a particular train, while in addition the restaurant car services of the British Transport Hotels and Catering Division are able to handle great fluctuations in demand and even to provide some monumental facilities of a once-off character. From VVIP's to beanfeasts, in fact, seems to be the motto. Very large private parties have been achieved at times when peaks of general demand were being experienced.

Origins

The early main-line railway companies realised that passengers on long journeys must eat, but no genius arose to suggest that there was any better way of doing it than had prevailed in stage coach practice. There the passengers went to one of the rooms of an inn and during the changing of horses obtained a meal of sorts. The inn was replaced by the refreshment room on station platforms and even apart from gratuitous complications of the kind that the nascent Great Western Railway created for itself with the contractor at Swindon, troubles soon arose. An ordinary room at an inn might easily cope with a dozen or so folk dismounting from a stage coach.

But the railway rooms soon were dealing with hundreds of passengers at a time and train service demands cut the time of doing it to a minimum. Long buffet counters were therefore installed so as to be staffed by a maximum number of helpers—and so the bar was born out of a railway necessity, to be copied by public houses and quick-service establishments the world over. When labour became scarce during and after the 1939-45 war, the addition of a barrier rail and the introduction of a flow system for customers produced the cafeteria.

Swindon

Some of the first railway refreshment rooms were fabulous in their dimensions. At Swindon, for example, two three-storey buildings each 170 ft. long and 37 ft. wide were built, giving 37,740 sq. ft. of floor area. Unfortunately, the railway company needed these rooms and large numbers of houses for works staff simultaneously at Swindon and it was decided not to employ railway capital but to induce a contractor to do the work by offering a 99-year lease from Christmas, 1841, at an annual rent of one penny. The lease provided that no comparable stopping place for refreshments should be established between London and Bristol and that the duration of the stop for all regular trains should be 10 min. What a handicap to the traffic department! But despite complaints, it continued for 54 years, for it was not until 1895 that the Great Western managed to buy the lease for £100,000 and remove the incubus from the train service. At the same time employment of its own catering department improved the quality of goods and service.

Three decades of unsatisfactory snatching of hot soup over counters, by passengers who had waited so long that they found either the soup too hot to drink or that the train had gone anyway, went by before the glimmering of the dining-car idea came. In 1874 the Midland Railway, then introducing its Pullman day and sleeping-cars, threw a lunch party in a sleeper adapted for the occasion. As there was no kitchen provision it was probably a cold collation that was served between St. Pancras and Bedford that day.

The Diner Arrives

The rival Great Northern saw there might be something in the idea of feeding while in motion and the company hired a Pullman car for its Kings Cross—Leeds service. The food was cooked on a coal stove by a caterer and the car—the first in public service—began work on September 26, 1879, running with the name *Prince of Wales*. As is recorded in Ellis's *Nineteenth Century Railway Carriages*, it was purchased by the G.N.R. in 1885 and the name was promptly removed in favour of a G.N.R. stock number. With gas lighting and cooking and now equipped with a vestibule at the kitchen end, the Pullman open verandah being retained at the other, it sustained the Great Northern reputation for a number of years. In the meantime the Midland adopted meal service on trains in 1882 and the London Brighton and South Coast on the Newhaven boat trains in 1884 with a Pullman car named *Maud*.

The Great Eastern Railway seems to have been the first to provide dining accommodation for the third-class passenger in 1891. A Harwich—York Continental set of six-wheelers had a first-class dining saloon and kitchen flanked by a first and second composite and on the other side a third-class coach, side corridors and side vestibules being provided through the three-coach unit. The London and North Western adopted the idea in 1889 and the Great Western (with the Swindon refreshment stop purged from its system) in 1896. It is amusing that the Great Western had corridor trains in 1891, but as a railway commentator of the day said, "the path of glory led but to the brakevan."

Buffet Cars

The turn of the century saw the meals on wheels movement given a great boost by Sir Sam Fay's buffet car expresses on the Great Central and the highly competitive breakfast, lunch, tea and supper facilities which suddenly developed on comparatively short runs such as the Great Eastern routes from Liverpool Street to Clacton and to Southend.

The pantry of a prototype restaurant-buffet car; one of the kitchen cars which can serve 224 meals at a time, designed for anthracite or electric operation; and, right, interior of the miniature buffet car

Between the wars the Southern Railway development of buffet- or dining-cars on the Portsmouth and Eastbourne services (the latter known as "pantry cars") and the liberal use of Pullmans were striking features of short-journey electric operation. Further progress since 1946 has brought about the intense services to which reference has already been made.

On British Railways there are available 761 restaurant cars and 199 Pullmans, a total of 960 vehicles, against which all the railways of Western Europe can muster only 478 cars in which meals are served. Relative to passenger train-miles the figures are quite amazing—the ratio is four to one in our favour, even if the Pullman cars are deducted from the total. Here is a 1955 statistic:

Country	*Passenger train-miles per car owned*
British Railways	242,943
Greek State	342,125
Austria	445,108
Spain	506,764
Portugal	624,727
France	631,857
Norway	646,800
Switzerland	737,340
Deutches Bundesbahnen	897,854
Sweden	1,101,140
Italy	1,322,058
Belgium	1,336,041
Netherlands	1,657,222
Denmark	1,900,110

These figures are the more remarkable in that they include all suburban and local train mileage where dining-cars would not be expected and so again, because of our intense suburban services, are not on a base specially favourable to Great Britain.

A Comparison

Any attempt to liken the railway restaurant car business to ordinary catering leads to quite astonishing results. Imagine the restaurant cars as units in a refreshment business having 569 branches doing all-the-year-round business, and another 147 (716 in all) doing business during June, July, August and September, plus a huge banqueting business all the time. Moreover, the branches have a country-wide but variable scatter, with consequent difficulties in supply and staffing matters. That would be quite a problem for a static multiple business.

Timetable Changes

When it is considered that what we have termed the branches are rolling about the country on wheels at high speed over the most intensively occupied railway system in the world, ranging from London—Perth, London—Glasgow, London—Cardiff, London—Penzance, Newcastle—Bristol, Brighton—Birkenhead or Newcastle—Liverpool, as well as on many other routes, it becomes apparent that there is quite an intriguing problem of stocking, staffing, supervision and administration. The premises, moreover, are liable to mechanical breakdown or periodic withdrawal for overhaul. Sometimes this happens at quite short notice, but even so an endeavour will be made to provide a substitute car. We wonder if ordinary caterers have ever tried changing over a restaurant for 200 people in half an hour flat from one lot of premises to another?

Overnight, with the change from the winter to the summer timetable, the refreshment car services of all sorts on British Railways increase from 569 to 716 each day; this increase excludes all the special occasions, of course. Staff for such a high percentage of variation cannot be carried on the establishment all through the winter, so suddenly over 100 chefs, waiters and others have to be produced and instructed in the intricacies of their job in a restaurant travelling at high speed. This is just one more example of the skill exercised traditionally by the railways in handling the peaks of travel—and something for which they receive remarkably little credit. Another achievement is the way in which duplications of advertised services are handled.

The all-time record is probably the Starlight Special cheap-fare trains which run in the peak summer weekends in many parts between London and Edinburgh and between London and Glasgow. Probably no other railway in the world could duplicate services to the extent that 44 and up to 48 trains have had cafeteria services going all night. Over 20,000 passengers buy meals of some sort on such excursions. The rostered workings provide for four trains only and the results are attained through the devoted service of volunteers from railway offices. They carry out a very good job of work on such occasions. The administrative problem of seeing that all are returned to base for work on Monday morning must also be borne in mind. This sort of mass catering is aided considerably by refreshment room managements who see the outward trains off at up till 1 a.m. and then are again awake to deal with arrivals and their staff and food problems from 5 a.m. onwards.

Specials

Then there is the banquet side. Perhaps 6,000 people in one party want breakfast and dinner, plus, of course, drinks, light refreshments, etc., in between, in the course of a railway excursion. Not at one point (where would it be possible to book accommodation of this size, anyway?) but as they go! Maybe the trip is between Nottingham and Blackpool, starting off more than 100 miles from the nearest restaurant car depot, so that crews, cars and stores spend a day working to the starting point and another day getting back. Mr. E. K. Portman-Dixon, a member of the Hotels and Catering Services board of management, cheerily accepts such conditions as being all in the day's—or rather three days'—work for the dining-cars; so the division sends out 278 staff, 24 restaurant cars, 42,000 pieces of cutlery, china, linen, cooking pots, teapots, cruets, and the like in quantities to match.

There must be for breakfast alone 6,000 eggs, 12,000 rashers of bacon, 1,000 lb. sausages, butter, marmalade, milk, tea, sugar, bread and so on. For dinner there are bound to be such items as half a ton of peas, 1,250 lettuce, or 120 gal. of ice cream. Quite a job, but just one of many to be covered on the same day, all for 10s. 6d. a head for dinner and 7s. 6d. for breakfast. Even at present-day prices meals in B.R. restaurant and buffet cars are cheap, often less than half the money, compared with those on the Continent of Europe. Moreover, there are plenty of schemes for keeping up with modern popular taste on suitable trains, with cheap meals based on griddle bars, egg and bacon bars and other snacks and on the other hand special meals at higher prices on certain business trains where the demand justifies something out of the ordinary being provided every day of the week.

The Future

What of the future? Mr. Portman-Dixon feels indebted to three classes of people for their great help in determining what shall be done. Firstly the staff who work the restaurant cars and who inspected the initial designs and models and made many valuable contributions to the designs for prototypes. When these were put in service the staff operated them and then put forward corrections of points of design in the light of experience. They showed great interest and were at great pains to help the B.T.C. on this.

Second come the carriage and wagon designers and carriage and wagon engineers who produced the prototypes and cheerfully surmounted "impossible" demands and furthermore delivered the finished article in an incredibly short space of time. The third party to the process of getting nearer the ideal car comprised the passengers who used the prototypes and with equal interest made constructive criticisms and suggestions from their experience as users. Out of all this emerged final designs for cars to meet all the varying conditions and needs.

Providing 224 Meals at a Time

The kitchen car is a full coach containing kitchen, pantries, stores, refrigeration, crew compartment and toilet, and is intended for use on heavily loaded long-distance and intercity trains in conjunction with dining saloons. It is capable of providing 224 main meals at one meal time. A miracle of planning gets what is necessary into this 6 ft. 6 in. wide kitchen.

Modern decor in British Railway prototype restaurant cars: Saloon of the restaurant-buffet car and, right, the layout of the saloon in a restaurant car unclassed

The kitchen buffet car is a full coach containing all the preparation and service facilities of the kitchen car but on a reduced scale. The space thus economised is used to provide a buffet counter which will offer a continuous light refreshment service in addition to the restaurant service. The kitchen is 14 ft. 9 in. by 6 ft. 6 in. and is probably as good an example as exists of the economic use of space, being smaller than the kitchen of a Government-approved design for a council house.

The restaurant car unclassed is a full coach of very compact design providing in the one coach all the cooking, storage, pantry staff and service facilities needed, plus the dining seats for passengers.

The Restaurant Buffet

The restaurant buffet is a still more compact design incorporating in a single coach a staff compartment, storage, kitchen, pantry, dining saloon and buffet. Again the choice of two forms of service is given to suit all tastes and pockets.

The miniature buffet is a very fine example of economical planning of space. With an area equivalent to 16 second-class passenger seats only, this unit offers a full service of hot and cold beverages,

(*Continued on page* 14)

Shell
Rotella
Multigrade
Oils proved best

Shell Rotella Multigrade Oils — the entirely new oils from the world-famous Shell Rotella range—are proving a big success. Reports show that operators are switching to Shell Rotella Multigrade. And no wonder! Shell Rotella Multigrade gives these added advantages over other oils:

FUEL SAVING
Extensive bench and field tests showed that Shell Rotella Multigrade gives a really worthwhile saving on fuel.

REDUCES ENGINE WEAR
Shell Rotella Multigrade flows freely the moment the engine starts and gives immediate engine protection.

PROLONGS BATTERY LIFE
Because Shell Rotella Multigrade makes starting easier it reduces load on batteries.

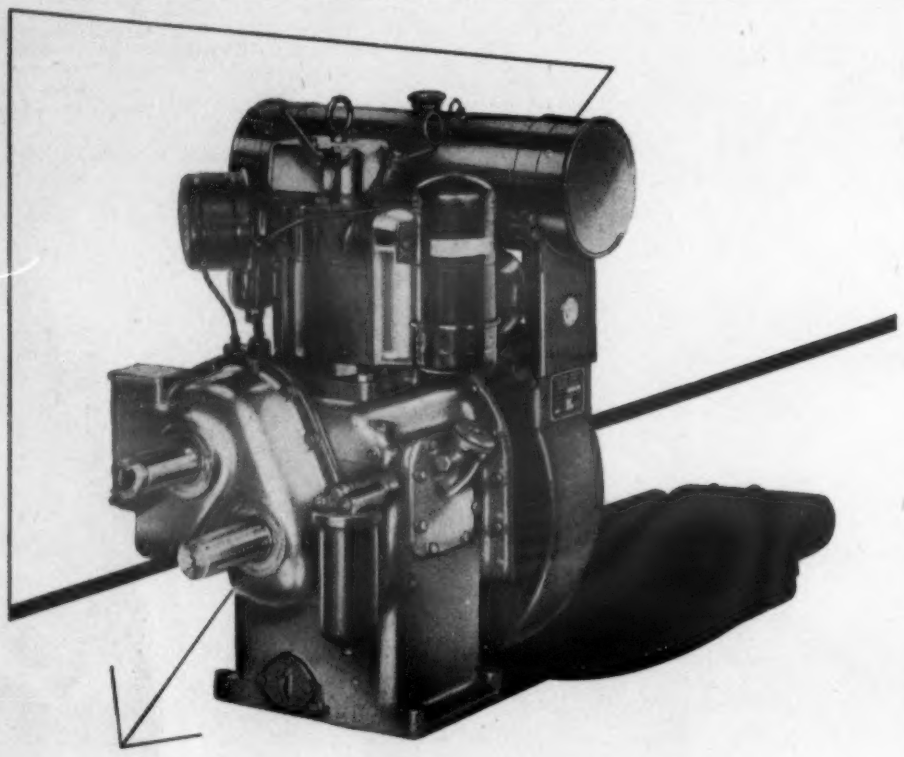
ELIMINATES SEASONAL OIL CHANGES
Shell Rotella Multigrade has an extended viscosity range—one oil only—summer and winter.

SPECIAL BONUS FOR MIXED FLEET OPERATORS
Shell Rotella Multigrade is suitable for both petrol and diesel engines. This means mixed fleet operators need only buy one oil for all their vehicles.

THERE ARE TWO SHELL ROTELLA MULTIGRADE OILS

Shell Rotella T Multigrade 10W/30—for engines that need "Supplement 1" lubricating oils.
Shell Rotella Multigrade 10W/30—for engines that do not need such a high additive level oil.

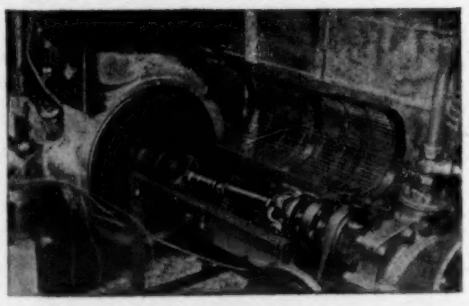
SHELL
Shell Rotella Multigrade Oils
LEADERSHIP IN LUBRICATION



feet on the ground at Ansty

Armstrong Siddeley Motors Limited—famous for developing the Double Mamba and other aero engines, and rocket motors—keep their feet firmly on the ground, as well. Ansty is the birthplace not only of high-altitude engines, but also of diesels for industrial, agricultural, marine and land transport use.

HARDY SPICER LTD. is proud that their cardan shafts and universal joints are relied on extensively on the development test stands at the Ansty Engineering and Research Centre of Armstrong Siddeley Motors Limited.



Transmission Equipment of
Inherent Dependability by

HARDY SPICER LTD
Birch Road, Witton, Birmingham 6 · Phone: Birmingham Birchfields 4504

Member of the Birfield Group

LORRY—BUS—COACH

Coaster Line to Take the Road

LICENCES are sought by London Scottish Lines, Limited, Leith, for 25 vehicles and trailers, with a total unladen weight of 80½ tons, at a base in Leith, conditioned, "general goods, Scotland, London and South-East England." This application arises out of the discontinuation of the coastwise service between Leith and London, already referred to in MODERN TRANSPORT.

Southampton Docks Tours

SO successful were last summer's bus tours of Southampton Docks, arranged jointly by Hants and Dorset Motor Services, Limited, and Southampton Corporation Transport Department, that a more ambitious scheme is planned for this year. Last season over 15,000 passengers were carried, about half of whom were visitors, many of them on holiday from the north of England.

Accommodation Guide for Drivers

A REVISED list of 500 names, addresses and telephone numbers of recommended roadside cafes has been issued by the Road Transport Catering and Accommodation Joint Committee, which is comprised of representatives of employers and workers interested in the road transport industry. All the establishments concerned have been inspected and approved by the Transport and General Workers Union. Individual cafe proprietors have also been given advice and assistance upon a variety of problems. Copies of the drivers' guide may be obtained from the committee at Roadway House, 146 New Bond Street, London, W.1, price 1s.

Ceylon Pirate Vehicle Nuisance

SPECIAL legislation is being prepared by the Ceylon Government to curb the activities of private vehicles which carry passengers for hire in competition with state transport services. The Minister for Nationalised Services and Road Transport, Mr. S. Wijesinghe, said that the proposed legislation would empower the Government to confiscate vehicles which operate illicitly at the expense of the State-sponsored passenger transport services, the Ceylon Transport Board and the railway. Under this law, touting for passengers in unauthorised vehicles will also be made an offence. Mr. Wijesinghe said that according to statistics compiled by the Transport Board there were very nearly 3,000 motor vehicles and cars which ply illicitly for passenger traffic and these vehicles deprived the state undertakings of approximately Rs.18 million annually. Of about 3,000 vehicles that ply illicitly, only a little over 300 are licensed to carry passengers for hire while the others are licensed as private vehicles.

Smithfield Concession

LAST week it was announced that an agreement has been signed between Smithfield Market tenants and trade union officials which permits butchers to carry meat to their vans in the market, and to dispense with the service of bummarees (licensed free-lance porters). But only butchers or their buyers—and not drivers or assistants—are allowed to handle the meat. If help is needed, the bummarees must be used.

Europabus Services to be Extended

THE German Touring Company has announced that considerable improvements, especially extension of schedules, are expected for this year's Europabus services. The Frankfurt—Constance service will be operated to Lucerne, beginning July 4, when it will run from Frankfurt via Heidelberg, Karlsruhe, Baden-Baden, the Black Forest, Freudenstadt, Villingen, Schaffhausen and Zurich to Lucerne. Connection with Constance will be available by railway at Donaueschingen, and that with Wiesbaden in Darmstadt. The Frankfurt—Salzburg service will be resumed on May 9.

Brighton Workmen's Fares May Go

WORKMEN'S fares on Brighton and Hove buses will be abolished if the South Eastern area Traffic Commissioners agree to proposals which will be put before them in March by Brighton Corporation Transport Department and the Brighton and Hove and District Omnibus Co., Limited. This and other proposals to meet a £30,000 rise in wages as a result of awards made to busmen at the end of last year have been approved by the Brighton, Hove and District Transport Advisory Committee for submission to the traffic commissioners. Increases in ordinary bus fares are also anticipated.

Short-Term Licence Warning

THERE is to be a tightening-up in the issue of short-term licences to hauliers engaged on local authority work, it was stated in the traffic court in Aberdeen by Mr. Alex. Robertson, deputy Scottish area Licensing Authority. These licences were intended to cover an emergency, said Mr. Robertson, but the use at present being made of them for local authority work was defeating the purpose of the Act. He was not prepared to continue the periodic renewal of short-term grants. Mr. P. Finnie, of New Pitsligo, who asked for the grant of three additional vehicles to work for Aberdeen County Council, had partly based his case on previous possession of short-term licences. As the county council was not represented, the hearing was adjourned pending negotiation between Finnie's agent and county officials.

B.E.S.T. Area May be Widened

BOMBAY Electric Supply and Transport, the municipal undertaking, has plans to extend its services to cover the entire area of Greater Bombay in the immediate future. The removal of tramcar services from some congested areas will have to await the arrival of additional buses, it is stated.

India Wants Multi-Fuel Engines

INAUGURATING the seventh All-India State Transport Undertakings Conference in Indore, Mr. Raj Bahadur, Indian Minister for Transport and Communications, said that passenger road transport was one of the very important industries which the state had chosen to take over progressively, from private hands. He said that the contribution made by this industry to the economy of the country was far better than that by many other industries. Mr. Bahadur suggested also that greater emphasis should be laid on the need for the production of multi-fuel engines instead of the present petrol or diesel engines.

B.R. Painted Over-Gloomy Picture

WHEN Rossie Motors (Rossington), Limited, applied successfully in the Yorkshire traffic court for additional summer coach excursions from Rossington, near Doncaster, to Scarborough, Bridlington, Cleethorpes and Skegness, it relied on the recent closure of Rossington Station as evidence of need. British Railways opposed the application: Rossington Station had been closed to passenger traffic, said Mr. J. Shaw, a British Railways witness, but excursions would be run from there. He said they would be advertised a few weeks before the time and also in the Press. Major F. S. Eastwood, chairman of the traffic commissioners, read from a British Railways notice about the station which, he said, left the impression that there would be no more trains at all.

Foden and trailer carrying hydrochloric acid tanks for the Staveley Iron and Chemical Co., Limited; right, Scammell Highwayman articulated tanker of British Qxygen with a liquid oxygen capacity the equivalent of 300,000 cu. ft. of gas. The liquid is carried in an aluminium tank (with Scammell automatic coupling) at a temperature of minus 297 deg. F.

Bus and Coach Developments

Coventry Corporation proposes a daily service between Pool Meadow and Allesley Park (junction of Torbay Road and The Chilterns) via Holyhead Road and Allesley Old Road.

It is reported from the Channel Islands that the Jersey Motor Transport Co., Limited, is receiving eight Leyland RTL-type buses from London Transport. This brings the number of post-war RT and RTL double-deckers sold out of service to more than 420.

Route modifications, which it is proposed should accompany the abandonment of Brighton trolleybus routes in March (MODERN TRANSPORT, February 14), are the subject of applications to the South Eastern area Traffic Commissioners. The present 53 (Seven Dials—Old Steine—Hollingdean Estate) would be withdrawn between Seven Dials and Old Steine. It would, however, be covered by the extension of erstwhile trolleybus routes 43 (Race Hill—Old Steine) and 44 (Black Rock—Seven Dials) via King's Road and Montpelier Road respectively to West Pier. The result would be a circular service between Black Rock and Race Hill with the section from Black Rock and Race Hill to Lewes Road traversed in both directions.

★

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

February 23—Burma.—Union of Burma Purchase Board for 50 Nos. BATTERIES, 12 volts × nine plates, size—length 13 in. × breadth 7 in. × height 8½ in. Tenders to Director General, Union of Burma Purchase Board, St. John's Road, Rangoon. (ESB/2978/58.)

February 24—Canada.—The Manitoba Hydro-Electric Board for the design, fabrication and delivery of MECHANICAL EQUIPMENT for a complete railway coal car shakeout station as described in the tender documents. Tenders to Mr. D. M. Stephens, Chairman and General Manager, the Manitoba Hydro-Electric Board, P.O. Box 815, Winnipeg 1, Manitoba. (ESB/2130/59.)

February 25—Vietnam.—I.C.A. procurement for one diesel injection PUMP TEST STAND, electric motor drive; one BRAKE LINING MACHINE, heavy duty; one HYDRAULIC PRESS, electrically operated, maximum tonnage 150; one ARBOR PRESS, bench or post type, 3-ton capacity; one d.c. ELECTRIC WELDER, electric motor drive, generator rating 300 amps, 40 volts; 16 diesel engine GENERATORS. Tenders to Central Purchasing Authority, P.O. Box H-5, Saigon, Vietnam. (ESB/1709/59/ICA.)

February 26—Union of South Africa.—Union Tender Board for two oscillating frame, track-type TRACTORS complete with hydraulically operated bulldozer equipments. Tenders to the Secretary, Union Tender Board, Assize Buildings, 291 Bosman Street (corner of Bosman and Schoeman Streets), Pretoria. (ESB/2831/59.)

February 26—Union of South Africa.—Union Tender Board for six rubber-tyred four-wheeled industrial-type TRACTORS, of not less than 40 h.p. and 10 6-ton hydraulic end tip wheel TRAILERS for use with the tractors. Tenders to the Secretary, Union Tender Board, Assize Building, 291 Bosman Street (corner of Bosman and Schoeman Streets), Pretoria. (ESB/2618/59.)

March 2—India.—Hindustan Steel Private, Limited, Rourkela Steel Project, for POWER SHOVELS, DUMP TRUCKS, MOTOR GRADERS, ROAD ROLLER, BULLDOZER, TRACTOR SCRAPPERS, etc. Tender documents from Assistant Administrative Officer (Purchase), Hindustan Steel Private, Limited, Rourkela Steel Project, 7 Wellesley Place, Calcutta, 1. (ESB/3704/59.)

March 2—Union of South Africa.—Division of Government Motor Transport during the period April 1, 1959, to March 31, 1960, for 30 sedan delivery VANS, 160 ½-ton VANS, 40 1-ton VANS, 240 ½-ton light delivery TRUCKS, 190 1-ton light delivery TRUCKS, 20 1½-1½ ton light delivery TRUCKS, 50 four-wheel-drive ½-ton light delivery TRUCKS, 10 four-wheel-drive 1½-1½ ton light delivery TRUCKS, 3 8-10 passenger BUSES, 180 3-ton TRUCKS with 12-ft. platform body, 50 5-ton TRUCKS with 14-ft. platform body, 50 5-ton TRUCKS with 16-ft. platform body, 40 7-ton TRUCKS with 16-ft. platform body, 6 10-ton diesel-engined TRUCKS with 24-ft. platform body, 2 5-ton four-wheel-drive TRUCKS with 14-ft. platform body, 60 3 cu. yd. TIPPERS, 50 4 cu. yd. TIPPERS, 20 7 cu. yd. TIPPERS, 3 800-gall. WATER-TANKERS, 9 1,000-gall. WATER-TANKERS, 3 21-seat BUSES, 2 34-seat BUSES and 6 MECHANICAL HORSES for use with a semi-trailer with a laden weight of 8 tons. Tenders to the Secretary for Transport, Division of Government Motor Transport, Private Bag 193, Pretoria. (ESB/3206/59.)

JOINT DISTRIBUTION FLEET GIVES GOOD SERVICE

The Reckitt-Colman-Chiswick Organisation

UNIVERSAL PALLETISATION OBVIATES PACKING

MANUFACTURING groups which have hitherto been content with individual distribution systems for each member of the group are showing an increasing interest in the rationalisation of their total transport and storage requirements. There is a growing trend in the direction of joint, or shared, transport organisations, which can extend to all a distribution service of a comprehensiveness perhaps denied to most individual participants in the group. By setting up transport distribution depots at strategic places wasteful duplication of delivery runs is eliminated and there should, too, be a saving in staff and vehicles.

It is also a normal development that as undertakings expand and amalgamate, even though for various reasons the old trading units retain their identity, there are a number of activities which can be more efficiently and economically operated centrally. Transport and intermediate warehousing are obvious examples of this sort.

One such group which has widened the basis of its common transport system since the end of the war is that controlled by Reckitt and Colman Holdings, Limited. It includes several household names in the toilet, pharmaceutical, food and allied industries—Reckitt and Sons, Limited, of Hull; J. and J. Colman, Limited, of Norwich; Joseph Farrow and Co., Limited, Peterborough; Chiswick Products, Limited, London; Meltonian Wren, Limited, Watford and Cricklewood, and others.

From this list it may be surmised that the range of products is wide indeed; it probably totals in excess of 500 and embraces commodities as diverse as flour, mustard and soft drinks; canned fruits and vegetables; toilet goods and pharmaceuticals; metal and shoe polishes.

History of Companies

Prior to and during the war the transport requirements of J. and J. Colman and Reckitt and Sons branches of Reckitt and Colman, Limited, were controlled separately (with joint consultation), but from 1945 there was a gradual rationalisation covering the whole company under one management. In 1954 Reckitt and Colman Holdings, Limited, was formed as a parent company and the shares of the Chiswick Products group acquired. In 1955 Chiswick Products commenced distribution through the R. and C. depot system. By early 1957 the great expansion in size and scope of the group's activities had rendered some reorganisation necessary and six main operating wholly-owned subsidiaries were formed each with a number of subsidiaries of its own. Under these circumstances it became desirable to extend the scope of the joint transport department to enable it to distribute for any other subsidiaries as might be necessary; for example, distribution for Meltonian Wren, Limited, commenced at the beginning of the year. Traffic of other subsidiaries is handled in suitable circumstances, but the primary emphasis is on consumer goods.

The group transport department, with the title Reckitt-Colman-Chiswick, operates under Mr. L. A. Carey as group transport manager, with headquarters at Norwich. Mr. Carey was transport manager of the Colman branch of Reckitt and Colman, Limited, until 1944, when he assumed control of the transport department of Reckitt and Colman, Limited. He has under his control a total of 21 distribution depots, each with a supervisor in charge, the depots being grouped under two area managers, one for the North, one for the South. The duties of the area managers include general day-to-day supervision of the depots in their charge, with particular regard to working efficiency.

Location of Depots

There are 20 depots in the United Kingdom, viz. Aberdeen, Coatbridge, Belfast, Low Wood (near Barrow), Yarm-on-Tees, Skipton, Hull, Batley, Liverpool, Northwich, Ripley, Birmingham, Peterborough, Norwich, Bletchley, London (Neasden), Basingstoke, Cardiff, Blackford (Somerset), and Plymouth, and one partly in operation at Inchicore (Dublin) which serves the Irish companies. These are fed from nine manufacturing plants entirely by road transport, about 10 per cent of it by own trunk vehicles, the balance British Road Services or independent hauliers. Because of the large number of factories and depots strategically situated throughout the country a high degree of two-way loading is possible, both for Reckitt and Colman Holdings and carriers' vehicles. The group has just over 300 vehicles in service, including vans used for advertising purposes, many of them being Thames diesel 3-ton chassis with heavy-duty equipment to take a standard 5-ton capacity body. Bulk haul vehicles are not numerous. The fleet is operated under a single C-licence held by Reckitt and Colman Holdings, Limited, the company having invoked the provisions of section 12 of the Road and Rail Traffic Act, 1933. The group head office being in Hull, the licence is issued in the Yorkshire traffic area.

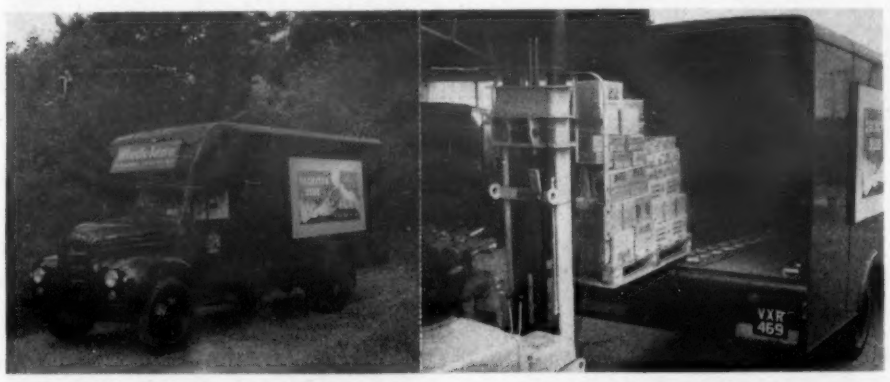
Some 20 vehicles are hired on A-contract licences without drivers at various depots, and in addition the company's fleet is augmented by short-term hiring as may be necessary. Hiring may be extended only on the authority of the area manager. In general, extension of the joint distribution scheme, which now is nationwide, has been in replacement of direct dispatch of the pre-packed consignments from works to customer by rail or other carriers, with a certain amount of local road distribution round works and in the London area.

Palletised shoe and furniture polishes in the Neasden depot of Reckitt-Colman-Chiswick; right, Yale Worksaver pallet truck with pallets assembled for van loading. In the background mixed unit loads are visible

Packing Reduced to Minimum

A principal contributory factor has been the marked reduction in packaging costs made possible by depot distribution using ancillary transport. Provision of fibreboard cases and other packing materials to railway requirements or standards can cost as much as £5 per ton packed and the annual saving under this head must clearly be considerable. Quite flimsy display cartons or similar retailer packs suffice for road delivery throughout. Palletisation is universal from point of production, en route to, and in the distribution depots and numerous items travel with perfect safety in small packs, sometimes banded in twos or threes, secured on the pallet by cardboard corner pieces. The average package weight is only 7 lb.

Deliveries are made at intervals of from two to five working days. The frequency naturally varies between town and country and depends also upon the volume of orders on hand, since a reasonable balance between service and economical operation must be maintained. Sales representatives enter their orders on a quadruplicate carbon-backed form listing in two parallel columns all the products of one manufacturer. A basically similar form printed in different colours is used for each of the five participants. The representative sends three copies of this order form to the depot in whose area he is working and the fourth, control copy, to his head office. This model documentation system, evolved and perfected by the company for its particular requirements, is used right the way through the stock dispatch process and also for stock control and stocktaking.



The standard Reckitt-Colman-Chiswick delivery van—a Fordson Thames 4D diesel 5-tonner, and an experimental pallet van. Mixed loads on 40 in. by 48 in. pallets are placed by fork-lift truck on one of two lightweight roller conveyors and lashed to recessed rings in the van side. The two central conveyor sections are removable

Load Assembly

Armed with the warehouse copy of a loading summary, a warehouseman draws out the various requisitioned quantities during the day and makes them up on a pallet as he goes. The pallet is then left in a demarcated area to await the return of the van. All depots of Reckitt-Colman-Chiswick have been constructed or rebuilt without loading platforms. Pallet transporters take pallets out to the loading area and there a fork truck places each in turn on the rear of the van where they are unloaded and the goods stowed, still in bulk, by the driver. The latter uses a second copy of the loading summary for checking on and delivery purposes. One fork truck can, in suitable conditions, service up to eight or nine vans.

Bulk delivery to depots is debited direct to the factory, but depot and distribution costs are spread

(*Continued on page* 6)

Others may struggle . . .

COMMERS take it in their stride!

How tough can a truck be? The answer is: as tough as a Commer! In-built is that extra power, strength and reliability that keeps it going steadily under the roughest conditions. You can, with confidence, put your trust in Commer.

Full details from your local Commer Dealer.

COMMER PETROL OR DIESEL FOR LOADS UP TO 12 TONS

the toughest name in transport!

ROOTES PRODUCTS—BUILT STRONGER TO LAST LONGER!

COMMER CARS LTD LUTON BEDS. EXPORT DIVISION: ROOTES LTD DEVONSHIRE HOUSE PICCADILLY LONDON W.1

"Wolf the work"

with **Wolf**

Electric Tools

DRILLS · GRINDERS · SANDERS
SAWS · BLOWER · SCREWDRIVERS · HAMMER
COMBINED MORTISER & DRILL · NUTSETTER
ENGINE RECONDITIONING EQUIPMENT
etc., etc.

Wolf ELECTRIC TOOLS

Full details of all Wolf Electric Tools on request from:

WOLF ELECTRIC TOOLS LTD • HANGER LANE • LONDON W.5

PERivale 5631-4

Branches: Birmingham · Bristol · Glasgow · Leeds · Manchester · Newcastle

Joint Distribution Fleet

(*Continued from page 5*)

over the participating companies on a two-part basis involving a weighted tonnage formula. First, there is a fixed sum for each delivery (a stopping charge in effect) irrespective of its size or character, second, a tonnage charge for the whole of the traffic, arrived at in the following way. The products of each company are periodically studied in order to assess the numbers which go to make a ton, their ease of handling and kindred factors. From this a loaded weight factor is assessed on the manufacturer for his entire output and this, not individual deliveries, nor their size, determines this part of the charge.

One man, one truck, is the message conveyed in this view along one of the aisles at Neasden, in which a Stacatruc fork truck and a Matling pallet transporter are prominent; right, Conveyancer fork truck withdrawing a pallet with small items from Gascoigne racking

Charging of Transport

If the loaded weight factor for subsidiary X is regarded as a basic 1 (i.e. one ton will be charged as such), that of Y may thus be 1.2 and that of Z 1.3. The total actual weight carried for each is multiplied by the appropriate weighting factor, the grand total divided into total costs (less the fixed delivery charge already levied) and each company debited with its proportion of the whole. This charging operation is carried out at the end of every third or fourth trading period, i.e. four times a year, and all transport costs are thereby recouped and the slate wiped clean. The transport department is thus not a trading entity and produces no profit and loss account in the accepted sense. Capital expenditure is met in the first instance by the senior member of the group. The validity of this charging system is proved by the fact that it shows a substantially uniform percentage saving vis-a-vis outside transport to each participant.

Nominated Days for Bulk Deliveries

A system of nominated loading is in force for bulk deliveries. Each depot is served on specified days laid down in an overall schedule of movements evolved to eliminate bunching of transport at either dispatch or receiving points. The timetable normally lays down hour of arrival—if the haulier is late he may be turned away, but all are acquainted with the rules.

A single pallet size, 40 in. by 48 in., four-way entry, has been standardised. There is a pallet manual issued to all concerned; it shows the correct loading pattern for every product and every pack. Total unit weights for a full pallet, and in certain instances for half pallet loads, are also indicated. Palletised transport has reduced from perhaps three hours to 20 min. the time needed to load or unload a 10-ton lorry with something like 3,000 packages. There is a -pallet control at Norwich with the duty of seeing each factory has sufficient pallets for its requirements and to direct surplus pallets to shortage points. An emergency pallet pool copes with seasonal fluctuations. It is estimated that, excluding the seasonal element, each pallet is turned over about seven times a year. No debit is accepted for the return by carriers of empty pallets as this cost is considered more than offset by reduction in terminal time. Empty pallets are returned in full loads if that suits the carrier.

The London depot, opened about 18 months ago, is the largest. It replaced three, at Wapping, Fulham and Kings Cross, with a substantial saving in manpower. Loading of up to 10 vans simultaneously is accomplished under an open canopy at one end of the warehouse.

Handling Equipment

A formal aisle arrangement is followed and there are no floor obstructions at all. Racking to a height of 11 ft. 6 in. is used to accommodate small pallet lots of slow-moving goods. The mechanical handling equipment available comprises the following:

One Stacatruc electric 2-ton fork truck;
one Conveyancer electric 2-ton fork truck;
two Yale Worksaver power pallet trucks;
three Matling ride-on pallet transporters;
three Atlas hand pallet trucks; and
two Portapal hand pallet trucks.

Experiments are now afoot to extend palletisation to the delivery sphere. At Basingstoke and Neasden vans are in service to test the practicability of this. In the Neasden experiment the van (seen in an accompanying illustration) is equipped with lightweight roller conveyors. The outer conveyor tracks are fixed but the two inner tracks, each made up of two sections, are removable, being located by means of pins engaging slots in the floor. The normal sliding doors on R-C-C vans have been replaced by hinged doors to obviate the door compartment but the feasibility of jacknife doors has not been overlooked. The rear of the van is enclosed by a full-length shutter.

To load these special vehicles pallets of mixed goods which have been assembled in the normal way in the depot are entered on to one of the conveyor sections by fork truck and rolled forward. It is assumed that the driver will have sufficient room to work between the two rows of pallets; he is assisted in this by setting back the upper tiers of packages on the rearmost pallets. In the early stages of the delivery round load stability is assured by lashing the unit loads to rings recessed in the body side. The van interior is of flush-fitted hardboard, with a steel rubbing strip along the base of the side panels to resist damage from pallets.

Delivery van drivers are skilled representatives of the companies. They must be able to distinguish immediately among the many hundreds of packages needed as the round progresses, and in the London area there is a good deal of cash collection. An average delivery round in this area comprises 30-40 drops. An ingenious bonus scheme maximises output but minimises overtime.

Joint transport in the Reckitt-Colman-Chiswick group has achieved its primary objective of providing a comprehensive and efficient delivery service peculiarly suited to its needs. In addition to improved delivery it has made a useful contribution in so far as productive capacity at one factory can be kept fully employed making a product sold by another, without the need (with distributing depots everywhere) to transfer the output back to the selling company for old-fashioned distribution. Instead it can go straight to the depot, joint transport handles it like any other group product and long cross-hauls are thus eliminated.

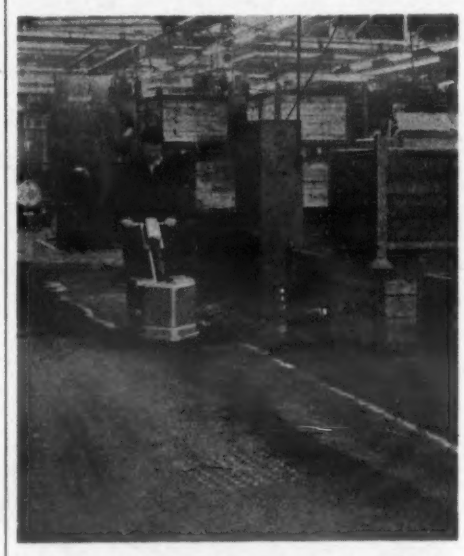
★

FLOOR MAINTENANCE

Range of B.V.C. Equipment

RECENTLY introduced by the British Vacuum Cleaner and Engineering Co., Limited, was a new range of floor-maintenance equipment of unusual versatility. The range includes wet and dry scrubbing machines, driers, polishers and a very effective scarifier for the removal of compacted dirt and grease; machines are available for operation from mains voltage or from self-contained batteries. Although only recently introduced for general sale, the first prototypes of the various types of machine were produced by the company in 1957, since when they have been tested under a wide variety of exacting conditions.

The range includes two fundamental types of scrubbing machine—the Chipmunk, a single-brush dry-cleaning and polishing machine which can also be used as a light sander, and the Musquash, a similar basic machine fitted with a detergent tank for wet scrubbing. Similarly in the heavy-duty range, the Hedgehog and the Otter are dry- and wet-scrubbing versions of the same basic machine, which is fitted with a 1-h.p. motor and designed for the heaviest types of work on factory, garage and workshop floors. This machine has two intermeshing brushes and when these are of the heavy spring-steel wire type it will scour and remove compacted grease and dirt from concrete or other surfaces that could otherwise only be removed by hammer and chisel.



A B.V.C. battery-operated Hedgehog scarifier at work in the Luton factory of Vauxhall Motors

Battery Operation

With suitable brushes the Hedgehog and Otter can also be used for lighter dry or wet scrubbing and polishing on a wider front than is possible with the single-brush machines. To provide for situations where mains electricity is not available or where trailing leads would be dangerous or an embarrassment, both the Hedgehog and Otter are available with self-contained battery operation. With two 12-volt Exide batteries the range of operation per battery charge is four hours. All the machines are fitted with reversing motors so that the brushes can be rotated in either direction, thus providing maximum brush life.

Also battery driven is the Vampire, the larger of two floor-drying machines that make up the new B.V.C. range. The Vampire has a 9-gal. capacity tank and is designed to work with the Otter wet scrubber while the smaller machine, the Ferret, which is mains operated, has a 6-gal. tank and is designed to work with the Musquash wet scrubber. Both are suction driers and are said to be extremely light to handle.

United Dominions Trust, Limited, has opened a new branch office at 2 Peterborough Road, Harrow, Middlesex (telephone Byron 5611/2).

Avon India Rubber Co., Limited, has announced increases in remould process prices, for giant, car and agricultural tyres. Casing values remain unaltered.

The British Trailer Co., Limited, has transferred its Leeds Office to Room 11, Basinghall Buildings, Basinghall Street, Leeds, 1 (telephone Leeds 24006). The office remains under the management of Mr. E. B. Butterfield.

New look...new features...★

for Britain's leading Light Van

10/12 cwt. van £445 plus £76.2.2 PT.
15 cwt. van £452.1.0 plus £77.10.11 PT.
Prices include front and rear flashers and spare wheel and tyre.

★ *New* one-piece curved windscreen • *New* smart front appearance • *New* combined front parking lamps and wide-arc flashers • *New* easy-to-see rear flashers at waist level • *New* long-life seals for front external sliding doors • *New* full-width rear safety bumper available as low cost optional extra. Plus many other recent new developments on Bedford vans, notably the 5-coat anti-corrosion primer finish, and optional choice of 4 factory finished body colours for only £12.10.0 extra.

Feature for feature you can't beat the sensible design of a Bedford . . . the easy loading, the easy entrance and exit through the front sliding doors, the easy turning and parking . . . and the easy-on-the-pocket running costs.

Britain's most versatile van

Bedford is Britain's most versatile van.
You can suit your special needs from hundreds of conversions, ranging from purchase-tax-free, 12-seater buses (£551 upwards) to a 200 cu. ft. high top van costing as little as £686.
Whatever the job, choose Bedford—
and do it better and more economically.
See your Bedford Dealer.

Better value...better service...

Better buy Bedford

Vauxhall Motors Ltd. • Luton • Beds.

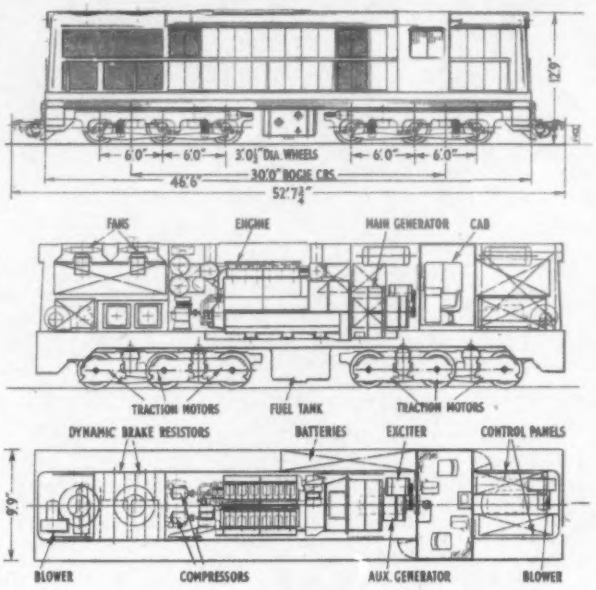
A 1,100-H.P. EXPORT DIESEL LOCOMOTIVE

Designed for Lightweight Tracks

FOR 42,000-LB. TRACTIVE EFFORT

DESIGNED specifically to meet the growing challenge of foreign competition in overseas markets, a new prototype British locomotive, the Explorer, will shortly be on its way to East Africa for extensive proving tests. Built jointly by the British Thomson-Houston Co., Limited, and Lister Blackstone Rail Traction, Limited, the new locomotive is a 1,100-h.p. diesel - electric, and represents a notable attempt to evolve a general-purpose machine suitable for lightly-laid railways in tropical and sub - tropical climates.

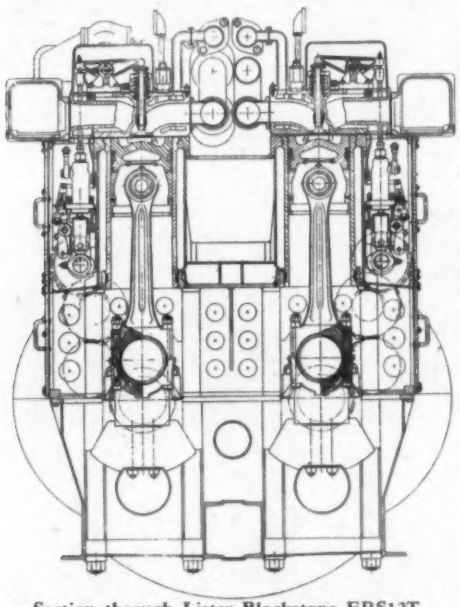
It will be seen from the following account that the main feature of the design is that with simple modifications, it can be adapted to meet a wide variety of operating conditions on gauges ranging from one metre to 5 ft. 6 in. In this way it is hoped that it will find a sufficiently wide acceptance to enable it to be built in quantity, and so reduce costs to a level which will make it competitive on the world markets.



Elevation and plan drawings of Explorer

12-ton Axle Load

In general terms the Explorer is a medium-sized mixed traffic locomotive, suitable for main and branch line freight haulage, and for passenger workings not demanding speeds in excess of 55 m.p.h. For the heavier duties it can be used as a multiple unit. With a total minimum weight of 72 tons distributed over six axles the locomotive has a wide availability that is particularly well suited to the requirements of metre and 3 ft. 6 in. gauge lines. This axle loading of 12 tons can, if required, be raised to 14 tons to give a maximum of 84 tons available for adhesion.



Section through Lister Blackstone ERS12T diesel

Narrow Hood

The maximum starting tractive effort is 42,000 lb.; there is a 24,000 lb. t.e. at continuous rating, and the design is arranged to sustain this effort at an ambient temperature of 120 deg. F. at sea level, or up to an altitude of 4,000 ft. at an ambient of 80 to 85 deg. F. The locomotive is capable of negotiating a minimum curve of 300 ft. radius, and if essential, the makers can reduce the overall height and width of the locomotive within certain limits, to meet individual requirements. Similarly, buffing and drawgear is arranged to meet the standards of the customer concerned, and where necessary cow-catchers of an approved design are also fitted.

Originally it was planned to have a full-bodied superstructure with a cab at each end, but after further investigation it was found that a narrow hood would be more suitable, as in hot climates this type is preferred because most of the maintenance is done in the open and accessibility from the outside is cooler and more convenient. Doors are fitted to the sides and front of the hoods, and sections of the sides and roof are removable for the fitting and lifting out of the engine.

The diesel engine is a Lister Blackstone type ERS 12 T four-stroke exhaust turbo-charged rail traction unit having a continuous rating of 1,100 b.h.p. at 800 r.p.m. The cylinders are arranged in twin banks axially parallel and opposite each other, there being two crankshafts carried in bearings supported on a common bedplate. The crankshafts each have a small flywheel and are identical. The drive is taken through spur wheels to a pinion mounted on the generator shaft, which rotates at a speed of 1,320 r.p.m., corresponding to the engine speed of 800 r.p.m. If necessary, as an emergency measure, it is possible to uncouple one bank of cylinders from the drive, and operate at reduced power on the remaining bank.

Power Equipment

The engine is automatically stopped if the speed rises by more than 20 per cent above the normal 800 r.p.m., or the lubricating oil pressure falls below 10 lb. p.s.i. Blackstone flexible couplings and Nodal dampers are interposed between the engines and generator driving gears to absorb variations in torque from the engine crankshaft, and torsional oscillations between the two banks of cylinders. The engine is water cooled and thermostatically controlled, each bank of cylinders having its own pump. Lubrication is the wet sump type with forced feed by gear displacement pumps. The two crankshafts have a common sump and the gearbox has an independent system.

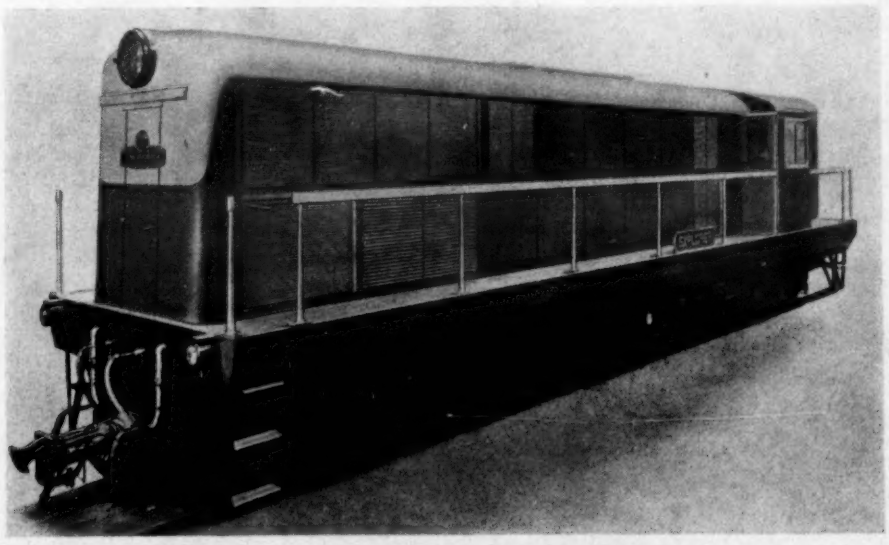
EXPLORER DIESEL-ELECTRIC LOCOMOTIVE—CONTRACTORS

Joint main contractors:—	
Electrical equipment	The British Thomson-Houston Co., Limited
Diesel engine	Lister Blackstone Rail Traction, Limited
Principal sub-contractor:—	
Mechanical parts including bogies	The Clayton Equipment Co., Limited
Other sub-contractors:—	
Axleboxes	The Skefko Ball Bearing Co., Limited
Battery	Chloride Batteries, Limited
Bogie pivots and axlebox links	Alsthom
Brakes, compressors and exhausters	Westinghouse Brake and Signal Co., Limited
Cable	Siemens Edison Swan, Limited
Conduit	Simplex Electric, Limited
Engine cooling equipment	J. W. Lawrence, Limited
Filters	Air-Maze, Limited
Oil and fuel pumps	Varley-F.M.C., Limited
Traction motor blowers	Aerex, Limited
Voltage regulator	Brown-Boveri
Wheels and axles	Taylor Brothers and Co. (Sandiacre), Limited

Generator

The main generator is a 10-pole machine, designed to withstand the severe duties imposed by traction work in conjunction with an internal combustion engine. The auxiliary generator is built on the same shaft as the traction generator; it is an eight-

(*Continued on page* 12)



The B.T.H.-Lister Blackstone 1,100-h.p. Explorer diesel-electric locomotive for railways with light permanent way

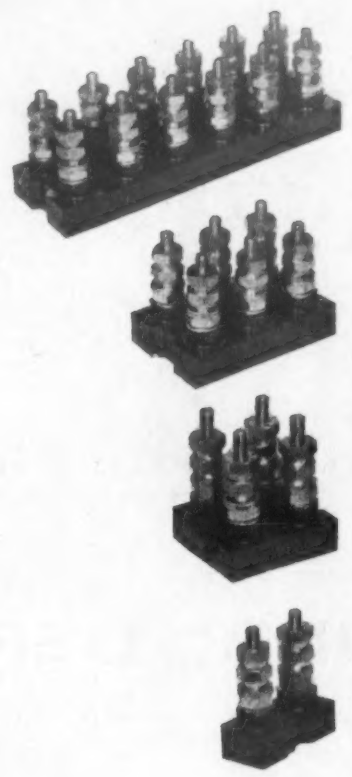
TYER & CO. LTD.

ESTABLISHED 1851

TERMINALS

PLASTIC MOULDED INTERLOCKING UNITS

and connecting links



★ *Constant terminal centres*

★ *Self-aligning*

★ *Multi-purpose*

★ *Easy-to-fit*

★ *Economical*

★ *Multi-way*

★ *Compact*

★ *Durable*

TERMINALS

O.B.A. brass posts, nickel plated with square-headed stems fitting into similar shaped recesses of base and sealed by hard setting compound ensuring non-turning and non-shorting.

Terminal centres 1" constant end-to-end or side-by-side.

BASE MOULDING

High quality black thermo-setting plastic with nib and slot interlocking feature ensuring correct alignment.

CONNECTING LINKS

1" centres type of slotted design with special metallic and insulated portions providing a ready means for disconnection of circuit without removing the link. Substantial in construction, economical in cost.

Also

TYER'S O.B.A. INSULATED SPANNER

economical in size and cost

another TYER *product*

Designed and built by specialists with the first name in signalling, at their Merrow Siding Works, Guildford, Surrey. "Standardisation of parts—interchangeability—unit construction" are part of the Company's design policy.

TYER & CO. LTD

Ashwin Street, Dalston, London, England

Telephone: CLIssold 1407/8 Telegrams: Switchmen, Easphone, London

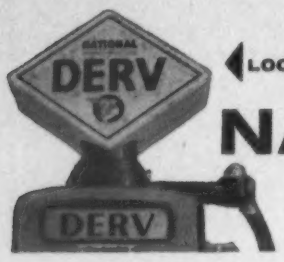
A member of The Southern Areas Corporation Group of Companies

NATIONAL DERV Agency System

Your drivers may refuel at any of the National Benzole agency sites, which cover the country, if they carry a National Derv Agency card. No money need change hands – the charge can be passed direct to the operating company. Drivers welcome this arrangement and operators find it preferable to cash-payment followed by reimbursement.

NATIONAL DERV is the premier diesel fuel – and the NATIONAL AGENCY Authority Card system makes it obtainable in the most convenient way.

Why not let us send you a copy of this book and arrange these agency facilities for you!



LOOK FOR THIS GLOBE

NATIONAL DERV

NATIONAL BENZOLE COMPANY LIMITED
MERCURY HOUSE, 195 KNIGHTSBRIDGE, LONDON, S.W.7
Agents for the Dominion Motor Spirit Co. Ltd.
G52

NEWS FROM ALL QUARTERS

No Parking Alongside Tramlines

As an experiment parking is prohibited in any street along which trams run in Vienna, the trial period running from January 1 of this year until March 15. There have been complaints in consequence that even moving traffic is avoiding streets carrying tram traffic.

East Kent Bus Committee Refused

Dover Rural Council has been told that, after 18 local authorities, all served by the East Kent Road Car Co., Limited, met to consider the establishment of a bus consultative committee, the bus company had refused to co-operate and had indicated that it considered such a committee would serve no useful purpose.

Underground Travel Check

A big three-day traffic route test on the London Underground was operated last weekend to get up-to-the minute information on travel trends. The ticket check, covering all Underground lines, was made to obtain information for future planning on the exact ways passengers travel and the density of traffic on different sections of lines. Twenty interchange stations were covered.

Berlin Transport Report

The 1958 report of the Berliner Verkehrs-Betriebe, the Berlin transport undertaking, shows that over the year some 687 million passengers were carried on all sections of the municipal undertaking, a rise of 5.2 per cent on 1957, which itself showed an increase of 1.6 per cent in passengers carried in the previous year. Great advantages were brought about by the extension of the Underground line C to Tegel, a line which had brought some completely new traffic.

Underground for Rotterdam

Rotterdam is to have an underground railway on the pattern of the Paris Metropolitain. The system will consist, according to present plans, of one line, about three miles long, from Rotterdam Central Station to that part of the city lying on the left bank of the Maas. The length of the tunnel in which the line will pass under the Maas is one kilometre. Six stations are planned for the line, which will cost, inclusive of rolling stock, about £14 million. Traffic capacity will be 30,000-40,000 passengers per hour each way.

Dock Labour Fall-Back Payments

The guaranteed wage for registered dock workers has been raised by 11s. per week. This was agreed last week at a meeting of the National Joint Council for the Port Transport Industry, but the amount of the increase was not disclosed. The previous standard weekly amount was £6 1s., paid at the rate of 11s. for each half-day on which an employee reports for duty but cannot be found work. At the meeting of the joint council, trade unions representing nearly 100,000 workers presented their arguments in support of claims already submitted for pension and sick pay schemes in the ports. The employers undertook to examine the claims and reply later. The new fall-back rates were payable from Monday this week.

Barking By-Pass Improvement

The construction of a second carriageway, 30 ft. wide, on the East Ham—Barking by-pass, between Prince Regents Lane and the East Ham—Barking boundary, started at the beginning of last year, has been completed five months ahead of schedule. Two cycle tracks and a footpath have also been built.

First Automatic Swiss Aerial Cableway

The first fully automatic aerial cableway in Switzerland was recently inaugurated at the lake-side town of Brusino-Arsizio, in Southern Switzerland. Tickets are issued by slot machine, and the passengers themselves start the gondolas through a push-button.

Low Rate of Labour Turnover

Simms Motor Units, Limited, of Finchley, has just reported a progressive decrease in labour turnover year after year culminating in the phenomenally low proportion of only 17 per cent in 1958. Calculated on the British Institute of Management formula, the figure over the past five years has steadily declined from 29 per cent in 1954.

Membrane Window for Ticket Offices

A new type of speaking window for ticket offices has been developed by the architect's office of the chief civil engineer, Eastern Region, and is in experimental use at Liverpool Street. It consists of a sheet of new transparent membrane called Melinex, produced by I.C.I., Limited, which is first glued to a hardened polyester resin frame with Araldite adhesive and then heat-shrunk until it reverberates at the required pitch. The assembly is snap-fitted to an aperture in the plate glass of the ticket office front and is easily replaceable.

More 40-m.p.h. Roads

The experimental speed limit of 40 m.p.h. will be applied to further lengths of road in the London traffic area from February 14, when new regulations made by the Minister of Transport come into operation. The lengths of road concerned total 23 miles, of which 17 have previously been subject to the normal speed limit of 30 m.p.h. and six miles unrestricted. A list of these roads is given in the schedule to the regulations. This is the second major instalment of the 40-m.p.h. experiment, the first part of which was launched on March 15 last year.

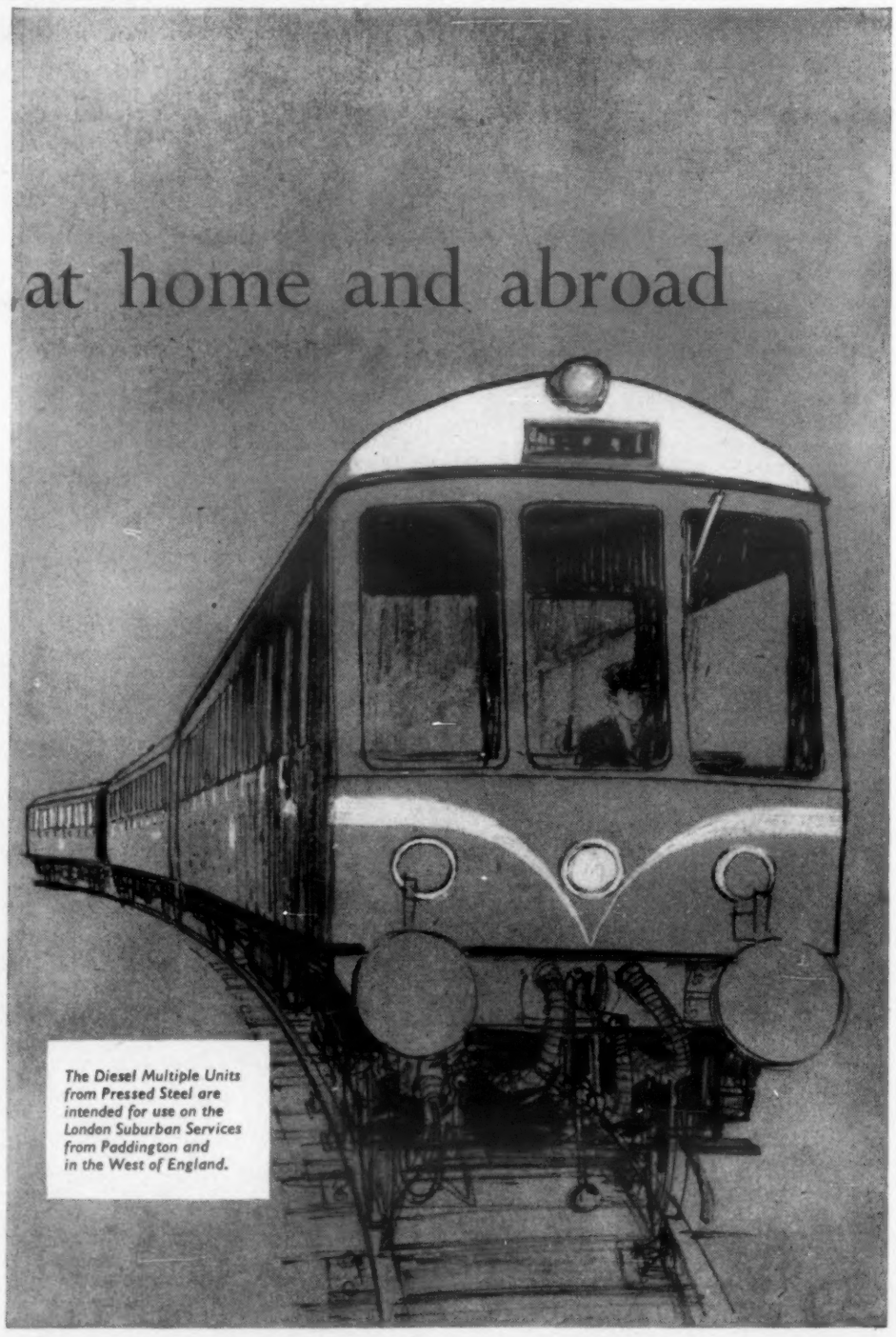
Canals in South Wales

At a recent meeting of the Railway and Canal Historical Society, Mr. Charles Hadfield gave a talk on "The Canal Development of South Wales." He described three important differences between the canals of South Wales and those of England: that there was little preceding river navigation and therefore canals were a new and not a developed form of transport; that the most important of them were all authorised between 1790 and 1794, and all opened between 1794 and 1799, so giving the iron-works of South Wales a good system of carriage within 10 years. In all, South Wales and the parts of Herefordshire and the Forest of Dean that were linked economically with her, had about 274 miles of canal at the fullest extent.

Pressed Steel
help modernise railways at home and abroad

The British Transport Commission has ordered a further 123 Diesel Multiple Units from Pressed Steel. These coaches are part of the railway modernisation programme for British Railways, and the order is a tribute to Pressed Steel's outstanding record.

In the last eight years Pressed Steel have supplied 80,000 new wagons and more than 800 units of coaching stock. They have produced a wide variety of wagons for different gauges for railways at home and overseas.


The Diesel Multiple Units from Pressed Steel are intended for use on the London Suburban Services from Paddington and in the West of England.

PRESSED STEEL COMPANY LIMITED

RAILWAY DIVISION,
LINWOOD FACTORY, PAISLEY,
SCOTLAND.
London Office: RAILWAY DIVISION,
47 VICTORIA STREET, LONDON, S.W.1
Head Office: COWLEY, OXFORD.

Manufacturers also of motor car bodies, Prestcold refrigeration equipment and pressings of all kinds.

COMMERCIAL AVIATION

B.O.A.C. Round-the-World

HELICOPTERS

FORMAL announcement has now been made by the British Overseas Airways Corporation of its intention to open the first round-the-world service with gas-turbine engined aircraft at the beginning of April. De Havilland Comet jet aircraft will fly eastwards from London to Hong Kong and Tokyo and Bristol Britannia 312 turbo-prop air liners will fly westwards from London across the Atlantic and over the United States and the Pacific to the same destinations. When these services come into operation it will be possible to fly round the world in 3 days 1 hr. 50 min. The Comets will fly from London to Hong Kong and Tokyo on several routeings which will serve between them Frankfurt, Zurich, Beirut, Tehran, Karachi, Delhi, Calcutta, Rangoon and Bangkok. The Britannia route from London will be through New York, San Francisco, Honolulu, Wake Island and Tokyo to Hong Kong. The first Comet service to Hong Kong and Tokyo will leave London Airport at 22.00 hr. G.M.T. on April 1. The first Britannia service, flying westwards, is to leave London Airport for Tokyo and Hong Kong the previous day, March 31, at 23.00. The two air liners will pass in mid-air, going in opposite directions, between Hong Kong and Tokyo on Friday, April 3. The B.O.A.C. Comets will fly to Hong Kong via the Middle East and India in a journey time of 26 hr. There will be four Comet services a week each way on this route and there will be two Britannia services a week each way on the transpacific route.

On one Comet service each week there will be a connection, after a stopover of three hours at Hong Kong, with a B.O.A.C. Britannia flying to London from Hong Kong via the Pacific and U.S.A. in 57 hr. 50 min., including a 12-hour stop at San Francisco. Thus the round-the-world journey eastbound from London to London will take just over 3½ days. The fastest journey round the world in the opposite direction will take a little longer because of schedule differences. This routeing, which includes a day's stop at Hong Kong, will take 4½ days.

London Helicopter Sites

Following the announcement last week by the London County Council of three suitable areas adjoining Central London for siting heliports, a statement was made in London on Monday by Rotorports, Limited, which has plans for a site west of Vauxhall Bridge on the south bank of the Thames. A public inquiry into its proposals for development is to be held next week. Broadly, the heliport will comprise a landing platform built over the river with a parking apron on the same level over the bank. Offices and most of the terminal facilities would be placed beneath the platform. On the platform itself there would be a public restaurant and a control tower. Air approaches conform to Ministry requirements.

Ceylon and Its Airline

The share holding of the Ceylon Government in the K.L.M.-Air Ceylon Corporation has been increased from 51 per cent to 74 per cent. This reduced the total Dutch holdings to 26 per cent from the original 49 per cent it held when the partnership was formed in 1956. The Ceylon Minister of Transport and Works, Mr. Maitripala Senanayake, stated that this was the first step the Government had taken towards finally taking over the entire international airline business. Ceylonisation was under way and training facilities were being offered to various categories in operation and management. He had asked K.L.M. to expedite the training schemes as he wanted more and more Ceylonese to have the opportunity to fly the international air routes. The Air Ceylon general manager, Mr. J. L. M. Fernando, stated that the airline had made a profit of over Rs 200,000 more than in the last financial year.

Rolls-Royce Dart Type Tested at 2,660 t.e.h.p.

The Rolls-Royce Dart R.Da.10 turboprop engine has successfully completed a 150-hour type test to the combined U.S.-U.K. Civil Type Test Schedule at a dry take-off rating of 2,660 t.e.h.p. (2,400 s.h.p. plus 670 lb. thrust). The test, which was completed during December, 1958, was officially observed by the Air Registration Board of Great Britain. All the periods for maximum continuous power settings in the type test schedule were actually run at the dry take-off rating of 2,660 t.e.h.p. In all, over 60 hours of the 150 were run at this power. The first Dart type test, completed exactly 10 years before, was at a rating of only 1,130 t.e.h.p. The Dart has been continuously developed during these 10 years, and engines have been type tested and put into production at successive ratings of 1,540, 1,760 and 2,105 t.e.h.p. The engine is being still further developed, and has completed a 25-hour flight approval test at a military rating of 3,200 s.h.p. boosted with water methanol.

Helicopter Operators Meet in London

A meeting of helicopter operators—Alitalia, British European Airways, Chicago Helicopter Airways, New York Airways and Sabena—under the chairmanship of Captain J. W. G. James, flight operations director, B.E.A., took place in London on February 11 and 12, to consider recent developments in the helicopter transport field and to consolidate future thinking on various aspects of heliport design, navigation, air traffic control and performance requirements in relation to helicopter transport operations. So far helicopter operations have depended upon single piston-engined types of aircraft, but large-scale expansion is imminent with the development of multi-turbine types of rotary-wing aircraft capable of all-weather flight with reasonable economic characteristics. On the question of navigational aids, the group decided that a low frequency hyperbolic area coverage system with pictorial cockpit presentation appeared to offer the most immediate promise for low altitude navigation, both in the terminal area and en route.

The current requirements for heliports were examined and it was apparent that the advent of multi-turbine helicopters with satisfactory one engine-out performance could provide an all-weather city centre to city centre service of great value to the travelling public. There was evidence to show that future helicopter performance might well enable a reduction to be achieved in the minimum size of heliports. Recognition was given to the necessary continuing developments taking place on noise suppression and attenuation by airframe and engine manufacturers, and it was unanimously agreed that all such work should be encouraged.

NEW MEMBER OF BRITISH TRANSPORT COMMISSION

Mr. K. W. C. GRAND, M.Inst.T.

• • • • • •

New member of the British Transport Commission in replacement of the late Mr. James Watkins is Mr. Keith Walter Chamberlain Grand, general manager, Western Region, British Railways. He was educated at Rugby and entered the Great Western Railway service in 1919 at Park Royal goods station. After gaining experience there, at Ealing Broadway, and in the divisional superintendent's office at Paddington, he was transferred to the general manager's office in 1922. In March, 1926, he was appointed general agent, G.W.R., U.S.A. and Canada. He was appointed assistant publicity agent, Paddington, in May, 1929, becoming commercial advertising agent a year later, commercial advertising and publicity agent in October, 1931, commercial assistant to superintendent of the line in July, 1933, and general assistant to superintendent of the line in August, 1934. In March, 1936, he was appointed divisional superintendent, Swansea, from which position he returned to the Paddington headquarters in October, 1937, as an assistant to the general manager. In 1939 he was appointed principal assistant to the general manager, from which position he was promoted in 1941 to that of assistant general manager, Great Western Railway. In 1941 also Mr. Grand was appointed by the Railway Executive Committee as liaison officer to the Director-General of the Home Guard, with the rank of colonel. He was also in charge of G.W.R. air raid precautions and fire fighting arrangements. He became chief regional officer, Western Region, upon nationalisation on January 1, 1948. He took an important part in the development of railway-operated air services and was responsible for the introduction of the first service between Cardiff and Plymouth in 1933. Subsequently he served on the boards of Railway Air Services, Limited, Great Western and Southern Air Lines, Limited, Guernsey Airways, Limited, Jersey Airways, Limited, and Channel Islands Airways, Limited, while he was also a director of British and Foreign Aviation, Limited, and chairman of Olley Air Service, Limited. He has served on the boards of a number of associated bus undertakings and is a director of City of Oxford Motor Services, Limited, Devon General Omnibus and Touring Co., Limited, and Western Welsh Omnibus Co., Limited. He is also on the boards of the Penarth Pontoon, Slipway and Ship-Repairing Co., Limited, and its associates and is chairman of the Fishguard and Rosslare Railways and Harbours Company. Mr. Grand was chairman of the Railway Clearing House in its last days as a statutory body from 1953 to 1955 and has since served as chairman of the B.T.C. Railway Clearing House Committee. He was awarded the American Medal of Freedom with Bronze Palm for his services to the United States during the war.

IN PARLIAMENT

Increased Airport Charges

PARKING METERS

IN a written reply to SIR SPENCER SUMMERS, who asked what steps the Minister of Transport proposed to take to reduce the deficit on civil aerodromes administered by his department, MR. HAROLD WATKINSON said that he had decided to increase landing fees and passenger service charges as soon as possible. Revised scales for the former should yield £660,000 for a full year, which was an increase of some 28 per cent overall. The passenger service charge would be raised by 2s. 6d. (making 7s. 6d.) per passenger for destinations abroad. This should bring in £220,000 for a full year.

Committee Studying Victoria Line

MR. H. WATKINSON indicated in a written reply that he was seeking the views of the London Travel Committee on the Victoria Line.

Canals

A debate on inland waterways was opened in the House of Lords by LORD AMMON, but pending publication of the White Paper on the Bowes Report, it proved rather a fruitless exercise. THE EARL OF GOSFORD, for the Government, indicated the complexity of the problems and that some of the proposals would mean millions in Government subsidies over a long period.

Parking Meter Schemes

MR. ERNEST DAVIES asked the Minister of Transport how many formal applications had now been made to him to make orders for the parking meter scheme by local authorities outside the Metropolitan area. He was told by MR. HAROLD WATKINSON, in a written answer, that formal applications had been received from Manchester, Liverpool, Bristol, Birmingham and Sheffield for the extension to them of the provisions of the Road Traffic Act, 1956, concerning parking schemes. He was considering the form of a composite order in which these and possibly other areas would be specified.

★

ROAD SIGNS AND BRIDGES

Revised British Standards

OF the 200 or more road signs in current use—they range from the familiar "Halt at major road ahead" to signs for special purposes such as "Trams cross here" and the new motorway signs—a large proportion is likely in the future to comply with the requirements of a British Standard published recently. (B.S.873 from Sales Branch, B.S.I., 2 Park Street, W.1. Price 10s., plus postage to non-subscribers.) The first edition of this standard (B.S.873) was drawn up in 1939; it has now been greatly enlarged and extensively revised to take account of new materials and methods of manufacture and to ensure that signs now manufactured will be of high quality.

The 1959 edition contains in its 44 pages a complete technical specification on how road signs together with their supporting posts, fittings and lanterns, as well as bollards (usually with an illuminated keep-left sign) should be made. The standard applies equally to the construction of street name plates and to other signs where visibility is important such as warning notices in factories. It does not cover the size, colour or lettering of the legends on signs—these being the concern of the Ministry of Transport.

Searching Tests

To comply with the standard, sample signs have to undergo ten searching tests in the laboratory. One has been devised to check the daylight luminance factor to ensure that the reflecting surfaces of signs will be easy to read as motorists pass them at speed during daylight hours. Another, carried out in a dark room, determines whether the reflecting parts (such as glass buttons) will be fully effective and visible to motorists at night. Other tests indicate whether road signs will stand up to the effect of weather: samples are placed in a revolving metal drum and for 1,000 hours they are exposed to the powerful light of an arc lamp and sprayed with jets of distilled water; periodically the signs are taken from the drum, heated in an oven and cooled in a refrigerator; to pass this accelerated weathering test the signs, when they come out of the drum, must retain their colour and show no trace of blistering, distortion or corrosion.

Further tests assess the resistance of signs to pollution of the atmosphere, to impact (from flying stones, for example) and to acts of vandalism such as the scraping of sign faces with knives. The supporting posts, whether of metal or concrete, must undergo strength tests to ensure that they will, for example, stand up to possible bumps from vehicles.

Standard for Girder Bridges

First issued in 1922, British Standard 153, for girder bridges, has been revised and reissued twice, first in 1933 and again in 1937. In consequence of modifications in the loading requirements for railways and highway bridges and of advances in experimental research and in design, a further revision became necessary, and, agreement having been reached on loading requirements, it was considered useful to precede the present general revision with the issue in 1954 of Part 3A—"Loads."

The remaining parts have now been extensively revised and have been regrouped and issued as two separate publications: the first includes Part 1 dealing with materials, workmanship and protection against atmospheric corrosion, and Part 2 covering weighing, shipping and erection. The second publication contains Part 3B, stresses, and Part 4, design and construction; and it is hoped eventually to incorporate in it Part 3A, at present published separately. This latest revision is considerably lengthier than the previous edition, and design and fabrication procedure have been brought up to date with a view to ensuring maximum efficiency in the finished structure.

The specification is intended primarily to apply to the superstructure of simply supported steel bridges of spans up to 300 ft. Where appropriate, the requirements of the specification may be adopted for larger spans or other types of steel bridges, but care should be taken, in these circumstances, to make whatever amendments are necessary for fixity at the supports, continuity and other indeterminate or special conditions, such as, for instance, may apply to opening bridges. Copies of Parts 1 and 2 (6s.) and 3B and 4 (15s.) are obtainable from the Sales Branch, 2 Park Street, W.1, and postage is extra for non-subscribers.

SILVER ROADWAYS LTD.

Reliable Trunk Services to all Parts

BRISTOL 9 The Grove, Bristol 1 — BRISTOL 22315
CARDIFF 10 Dumfries Place — CARDIFF 31631
GLASGOW 12 Dixon Street, C.2 — CITY 3381
BIRMINGHAM 323 High St., West Bromwich, Staffs. — WEST BROMWICH 2801
SWANSEA Exchange Buildings — SWANSEA 54171/5
LIVERPOOL 11 Old Hall Street, Liverpool, 3 — CENTRAL 6386
LLANELLY Morfa Works, Llanelly — LLANELLY 4303
TAVISTOCK Harford Bridge — TAVISTOCK 2374
NOTTINGHAM Pavilion Building, Pavilion Road, West Bridgford — NOTTINGHAM 83461
LONDON 22-24 Bermondsey Wall West, S.E.16 — BERmondsey 4533

PICKFORDS HEAVY HAULAGE SERVICE

Abnormal Loads • Lifting

MOBILE CRANES FOR HIRE • Branches in all large towns

CLASSIFIED ADVERTISEMENTS

RATES.—The minimum charge for classified advertisements is 7s. for 14 words or less, and 6d. for each additional word. The name and address of the advertiser is charged at the same rate. If a box number is used 2s. extra is charged to cover our name and address and postage. If set in paragraph form each paragraph is estimated separately. Official Notices and semi-display in the classified columns are charged at the rate of 40s. per single column inch.

SHIPPING CONSULTANT

MR. HAROLD HOFFMAN, late Unilever shipping manager, is available for consultation on problems where his extensive knowledge of shipping in all its branches would be useful. "Heathfield," Abbotsbury Gardens, Eastcote. Telephone Pinner 449.

ROAD HAULAGE ASSOCIATION
Eastern Area

Young man required immediately as Assistant Area Secretary in the Eastern Area Office in Cambridge with a view to advancement to Area Secretary after a period of satisfactory service.

Apply in writing, stating age, details of experience and salary required to:

Area Chairman, Road Haulage Association
56 Hills Road, Cambridge

CONDOR freight

a new express overnight door-to-door container service between London & Glasgow

begins 16th March

Condor freight service is the first of its kind in this country. Your goods are collected one afternoon and delivered next morning at special inclusive rates per container. Condor freight is the finest and fastest long distance freight service in Britain. For full details about rates and this new service get in touch with Mr. G. E. Curtis, District Goods Manager, Broad Street Station, London, E.C.2. (Tel: Avenue 7535), or Mr. J. M. Fleming, District Goods Manager, 50 George Square, Glasgow. (Tel: Douglas 7080).

BRITISH RAILWAYS

speed Britain's freight

BULK CEMENT DELIVERY TO PLANT

Conveyor Discharge from Barge

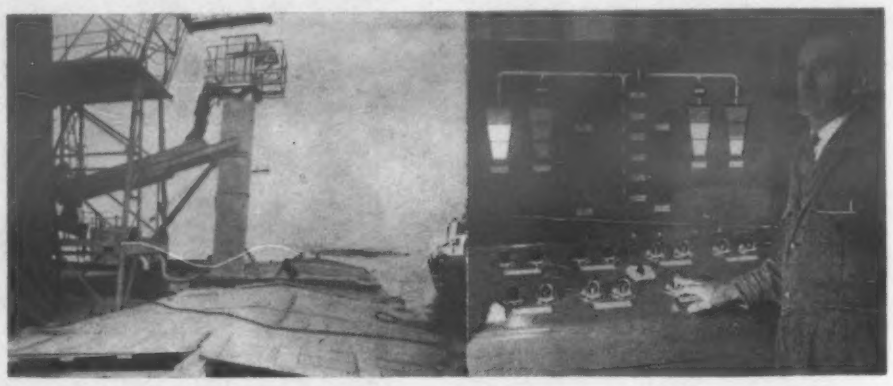
BULK delivery by barge of many thousands of tons of cement is achieved without resort to any manual handling in a new plant installed at the Erith (Kent) works of Turners Asbestos Cement Co., Limited, and formally opened on February 3. The installation is situated on the west side of the Erith works wharf, known as Anchor Bay. The unloading plant consists of a counterbalanced bucket elevator suspended from an A-frame structure so that its height can be regulated to suit variations in tide and draught.

This elevator discharges into a screw conveyor which responds to the movements of the bucket elevator. Cement is then passed through a second fixed screw conveyor which delivers into a surge hopper arranged over a Fuller Kinyon cement pump. This pump and ancillary equipment, as well as the main control desk and the plant required for supplying barges with power and compressed air, is housed in a building adjacent to the unloader structure, and is arranged to discharge cement through a pipeline made from T.A.C. asbestos cement pressure pipes and electrically operated, remotely controlled valves to the machine silos.

Turnround on Same Tide

The barges, which bring the cement from the Cement Marketing Wouldham works on the Medway, have a maximum capacity of about 350 tons and the plant has been designed to handle this quantity into the storage silos well within one tide to facilitate turnround of barges. Provision is made for a second unloading plant. The silos may be filled from or discharged into road tankers.

Turners Asbestos Cement Co., Limited, has had extensive experience of bulk handling of cement. The first bulk deliveries were made to its Dalmuir works, near Glasgow, in May, 1954, and after the equipment had been proved it was decided to go ahead with the erection of a similar installation at Widnes, but taking delivery in rail wagons. In March, 1955, the erection of a bulk cement handling plant in the south factory at Erith was completed.



Cement elevator discharging barge at Turners Asbestos Cement works at Erith; right, a central control panel provides visual indication of discharge routes and state of storage silos

A fleet of bulk container road vehicles is employed to keep the silos full.

Old Method

Cement used in the north factory was previously delivered by barge in 2-cwt. sacks from Wouldham works. Steam cranes on the river front lifted these sacks on to trucks which transported the cement to a store from which it was manually handled, as required, into the conveying systems supplying the asbestos-cement making machines. The cement was delivered, firstly in jute bags, which had to be returned and kept in repair, and later in non-returnable paper sacks, but it was not always easy to dispose of these.

A 475-ft. long loading bay for road vehicles was opened early in 1958 at the Erith works for moulded asbestos goods. Loading is by means of overhead crane.

New Cab for Karrier Bantam

ENHANCED COMFORT FOR DRIVER

FOLLOWING the success of the all-steel forward-control cabs now fitted to Commer and Karrier Gamecock 4-5 ton commercial vehicles, a similar unit is to be fitted to Karrier Bantam 2-3 ton chassis and 4-5 ton tractors. The new cab has been designed to provide the greatest possible driving comfort together with exceptional forward visibility.

This view of the new forward-control cab for the Karrier Bantam shows clearly the one-piece windscreen and the neat appearance of the unit

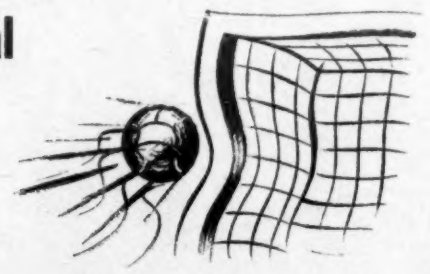
On the 2-3 tonners, these features have been achieved by fitting a fully adjustable, single bucket type driving seat with a full two-seater bench unit alongside and by incorporating a deep, one-piece, panoramic vision windscreen. The tractors are, however, fitted with two bucket seats providing accommodation for a driver and one passenger. In addition, the cab has been made three inches higher than the model it replaces. This extra headroom gives a feeling of greater spaciousness and also allows a deeper windscreen to be fitted.

The South Wales divisional office of the National Benzole Company has moved to larger premises at Devonshire House, Greyfriars Road, Cardiff. The telephone number is Cardiff 28611.

The London offices and showrooms of the Windsor Group of Companies has been moved to 76 Jermyn Street, S.W.1. The group includes R. H. Windsor, Limited, Klaxon, Limited, and Webley and Scott, Limited. The new telephone number is WHItehall 0411.

Owing to the continued expansion of the mechanical handling division it has been decided that Sherpa Sales would be more conveniently run direct from the head office of Salisbury Precision Engineering, Limited, at Castle Road, Salisbury, Wilts (telephone 4291). A showroom will, however, be retained at 1 Buckingham Palace Mansions, Buckingham Palace Road, London, S.W.1, where a representative range of standard models is available for inspection.

To attain your goal GET THINGS STRAIGHT



and the straight fact is that there's a Bawn tanker tailor-made for every liquid moving job. Petrol, chemicals, oil, hot liquids, cold liquids—our tankers cope with them all, conveying at normal or maintained temperatures as required. For years we've taken the worry out of the tricky job of moving liquids.

Why not give us a ring?

G.1

W·B·BAWN & COMPANY LIMITED
Byron Works, Blackhorse Lane, London, E.17
Telephone: LARkswood 4411/4

ALSO MANUFACTURERS OF "HELMSMAN" STEEL EQUIPMENT AND STEEL PLATE FABRICATIONS

TRANSPORT COSTS

Their Relation to Policy

*By H. E. OSBORN, C.A., M.Inst.T., Chief Accountant and Financial Adviser, British Transport Commission**

ONE of the outstanding characteristics of the output of a transport undertaking is the perishability of the product. The output cannot be stored and a seat-mile, for example, ceases to exist as soon as it is produced; if not sold precisely when and where it is produced, it is valueless. The same, of course, applies in the case of freight transport to the capacity-ton-mile. If a wagon is not fully occupied, the unused ton-miles perish as they are produced. Indeed, there are a great many invisible capacity-ton-miles which are also wasted—those represented by the additional wagons which could have been hauled on a particular train, but which were not; and the trains which could have been run with the staff and locomotives available but which were not required at the time and the place at which the men and equipment were available.

So there is a great deal of apparent waste in transport. On the average only about 33 per cent of the seats on a London bus are occupied; the corresponding figure for a London Transport train is only 38 per cent, and this counts all standing passengers as though they were occupying seats at some other time of the day! The effective hours during which staff are employed actually driving trains or buses is sometimes only one half of the total hours on duty. This is largely a reflection of the character of the services provided. Again, the effective utilisation of the time of a signalman is necessarily a reflection of the number of trains passing his box and the extent to which a booking clerk is effectively used reflects in large part the number of passengers using the station in question. Similarly, the utilisation of some classes of assets is low because of daily and seasonal fluctuations.

The Load Factor

A concept of great significance in transport is the load factor. This takes various forms. The average number of seats which are occupied on a given passenger service is an obvious and useful example. It is often even more useful to know the load factor separately for different periods of the day. On the road freight side, the load carried by a lorry can be related to its capacity and, on the railway freight side, similar statistics for the wagon and for the train are further examples. Load factors are of most use in relation to particular services or groups of related services. An important part of management in the transport world is essentially the examination of the reasons for unsatisfactory load factors and the taking of the necessary action to secure an improvement, where this is appropriate.

Another very important feature of transport operations is the immense variety of individual transport jobs which are performed, even within one transport undertaking. As a consequence of the great variety of individual transport jobs, it is very difficult to obtain any global measure of output which is of real significance. For this purpose, we sometimes have to make do with passenger-miles and net ton-miles, but it must always be remembered that the individual passenger-miles and net ton-miles which are added together vary widely in their real significance. There are corresponding difficulties in the measurement of costs per unit of output. As a result of the very wide range of individual transport costs, average costs are often most misleading, whether intended as a measure of performance or as a guide to policy.

Which Transport Costs?

The real cost of transport to the community is represented by the use for transport purposes of resources (manpower, fuel, etc.) which if not so used could be employed for the production of other goods and services. There are many technical difficulties in measuring this cost in terms of money. Another global concept is the expenditure incurred by the various producers of transport—the expenditure of undertakings which operate for hire or reward and of private operators, including the operation of C-licence vehicles and private cars and scooters. The aggregate expenditure of these transport producers does not correspond precisely with the real cost of transport to the community. One may be greater or smaller than the other because of the incidence of taxes and subsidies and because of certain social costs, such as those arising out of road congestion and road accidents which are not borne, or wholly borne, by the producers of transport.

Then there are the costs of transport paid by the consumer of transport. As regards the consumer of "professional" transport services, it is reasonable to assume that fares and charges must in the very long run correspond with the costs borne by the transport producers (including the remuneration of capital), but in the short run there can be considerable deviations, perhaps as the result of Government action in preventing increases in fares and charges, perhaps as a result of the existence of excessive transport capacity and the consequent cutting of rates, or for other reasons. As regards the private consumer of transport, consumption and production go hand in hand, but reasonably accurate assessments of the aggregate costs involved are not available.

Distinctions in Output

There are also important distinctions to be made between the various kinds of output which can be used in computing costs per unit. Consider, for example, the cost per bus-mile; the cost per seat-mile; and the cost per passenger-mile. It will readily be appreciated that when the number of seats is taken into account, as it is by calculating costs per seat-mile, the costs for selected routes may well stand in a different relationship than they do when the costs per bus-mile are considered. Then the extent to which the seats provided are in fact occupied—the load factor—has often even more important effects and the ranking of various routes by cost per passenger-mile may be quite different from their ranking by cost per seat-mile. Again, the cost per seat-mile of a rail journey may be below that of a corresponding journey by express coach service, while at the same time the cost per passenger-mile of the rail journey may be above that of the road journey. If this should be the case, it is important to appreciate the reasons for this state of affairs, which may reflect differences in the public obligation, either in law or by custom, of the two forms of transport compared.

It is often necessary in practice to resort to making allocations of joint costs, i.e. it is necessary to impute the costs on some basis or other to particular operations or activities. I am afraid, however, that the recipients of the resulting figures often fail to appreciate the fundamentally important assumptions which have been made. It should be noted that whether particular costs are joint or not depends upon the scale of the operations under consideration and the time factor. Thus the cost of fuel, for example, is specific (within narrow limits) to a particular round trip of a bus, while the costs of the driver and conductor are joint with the other trips which they do. But if we are considering the costs of a particular bus route, then the wages of the driver and conductor are specific and not joint—unless there is inter-working between one bus route and another, in which case it will be necessary to look at the group of related routes.

For important sectors of transport, and in particular the railways, the operations over considerable lines or areas constitute a network and much of the expenditure contains elements of jointness. The attempt to measure the effect on the costs of the ebb and flow of the traffics carried by such a network presents problems and pitfalls for the traffic costing accountant.

Averaging of Costs

It will be appreciated that fares and charges for a particular transport job cannot be based on a precise calculation of costs. This leads to the averaging of costs in one way or another—or perhaps it would be better to say the averaging of charges. These terms do not mean that the prices charged by the transport operator have consciously been related to some average cost or other, but are intended to convey that more or less uniform prices are charged for a selected group of transport services or jobs, notwithstanding significant variations in cost between individual ingredients in the group.

Since the setting up of the British Transport Commission, substantial progress with our thinking on traffic costing has been made. Much effort has, we find, to be devoted to explaining the real significance of the figures produced, and especially their inherent limitations. Taking railway freight operations first, the general approach has been to analyse the transit into its constituent physical operations and then to put a "cost" or "price" upon each of these. An aggregate cost—usually expressed as a cost per ton—can thus be obtained for the throughout transit. The main physical constituents of a transit which we distinguish are:

Haulage (excluding wagon costs)
- (*a*) Trunk haul
- (*b*) Service between small stations and local marshalling yard (where applicable)

Provision and maintenance of wagons

Marshalling

Terminal operations
- (*a*) Wagon shunting
- (*b*) Facilities for loading and unloading wagons
- (*c*) Handling of goods and transfer to road vehicle (where performed)
- (*d*) Collection and/or delivery by road (where applicable).

Dependence Upon Circumstances

For each of the headings set out above, there is a wide range of cost dependent upon the precise circumstances—thus, obviously, the haulage cost per train-mile depends upon the speed, the engine power provided and so on; in turn, the haulage cost per wagon-mile depends upon the number of wagons hauled and the haulage cost per ton-mile upon the number of tons in the wagon. Again, the terminal and marshalling costs vary widely at different locations, reflecting largely the utilisation which it is possible to obtain of the available staff and equipment in the circumstances of the particular place. We frequently find it useful to calculate optimum costs related to a high level of utilisation and to contrast these with the ruling level of costs.

The costs for each of the above physical constituents are made up of separate costs under a number of individual heads. To take haulage as an example, the costs are assembled under the following heads:

Provision and maintenance of locomotive
This includes interest on the cost of the locomotive as well as a provision for renewal.

Wages of footplate staff
The wages taken to account are those paid in respect of time with the engine while in traffic. National insurance, clothing and holiday pay are treated as an oncost, as also are time allowances for booking on and off, time travelling as passenger, overtime allowances, etc. Times allocated to the preparation and disposal of engines, shed shunting, etc., are segregated and dealt with under the heading of "Stabling and servicing."

Wages of guards

Fuel
Based on estimated consumption of coal or other fuel per mile, related to the class of locomotive and the type of work performed.

Water

Lubricants

Stabling and servicing of locomotives
The provision and maintenance of the track and buildings used for stabling are excluded under this head, together with expenditure on inspection, cleaning, boiler washing, etc.

Assembling the Ingredients

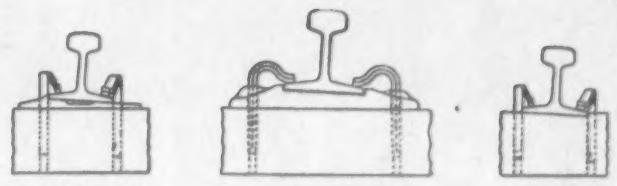
In order to arrive at a total transit cost, it is necessary to assemble the costs of the individual ingredients. Wherever possible, this is done in relation to the facts of the case, the length of the trunk and of the pickup haul, the number of marshallings, the average number of wagons per train and so forth in relation to the particular flow of traffic being taken. For other purposes, however, and especially when it is desired to have transit costs of a more generalised character for ranges of distance or broad types of traffics, assumptions may have to be made about the pattern of "normal" operating circumstances.

The individual ingredients must, of course, be included in their appropriate proportions. Thus the goods terminal costs are incurred twice, once at each end; while for sundries traffic there may also be an intermediate transhipment. Terminal shunting normally takes place at each end of the journey and, in addition, a further allowance requires to be made for the terminal shunting on empty journeys. The question of how much to include for empty wagon mileage is often a major difficulty. Circumstances vary greatly and a reasonable proportion of the empty wagon costs has often to be attributed to particular flows of loaded journeys on somewhat arbitrary bases. It is, of course, necessary to allow for both the costs

(*Continued on page* 16)

* Abstract of a paper presented to the February meeting of the Irish Section of the Institute of Transport.

ELASTIC RAIL SPIKES

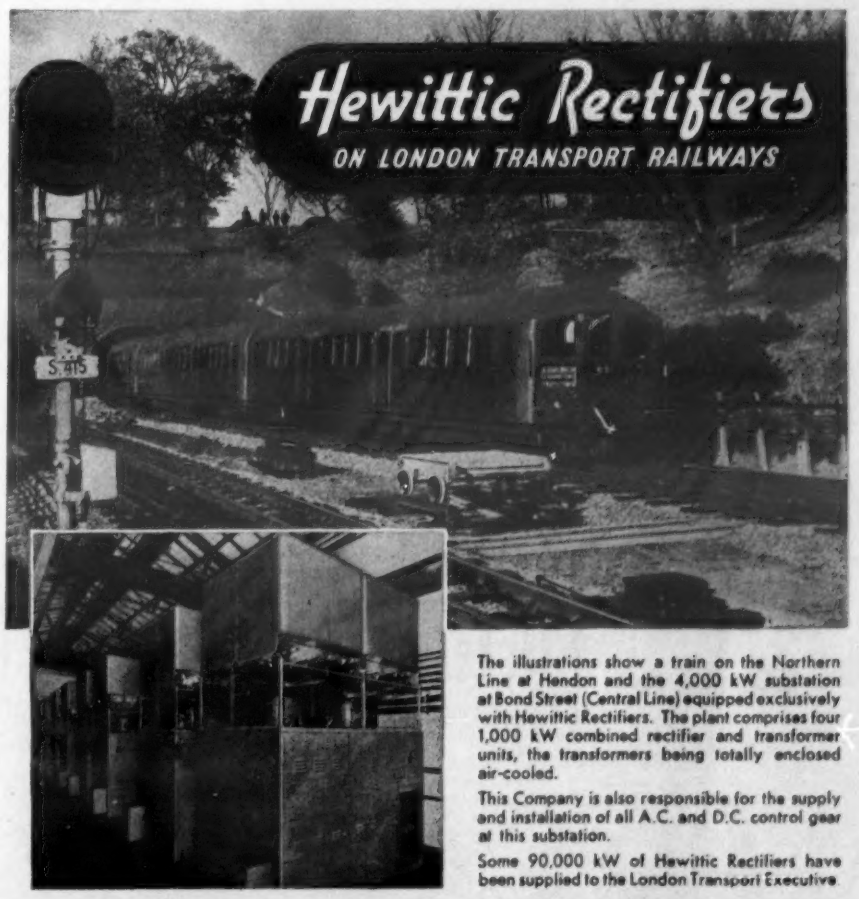


REDUCE TRACK MAINTENANCE COSTS

ELASTIC RAIL SPIKE CO. LTD.

41/43 MINCING LANE, LONDON, E.C.3

Telephone: MINCING LANE 3222 Cables: ELASPIKE, LONDON



The illustrations show a train on the Northern Line at Hendon and the 4,000 kW substation at Bond Street (Central Line) equipped exclusively with Hewittic Rectifiers. The plant comprises four 1,000 kW combined rectifier and transformer units, the transformers being totally enclosed air-cooled.

This Company is also responsible for the supply and installation of all A.C. and D.C. control gear at this substation.

Some 90,000 kW of Hewittic Rectifiers have been supplied to the London Transport Executive.

OVER 1½ MILLION kW IN WORLD WIDE SERVICE

HEWITTIC RECTIFIERS—PUMPLESS—AIR COOLED—UP TO ANY CAPACITY

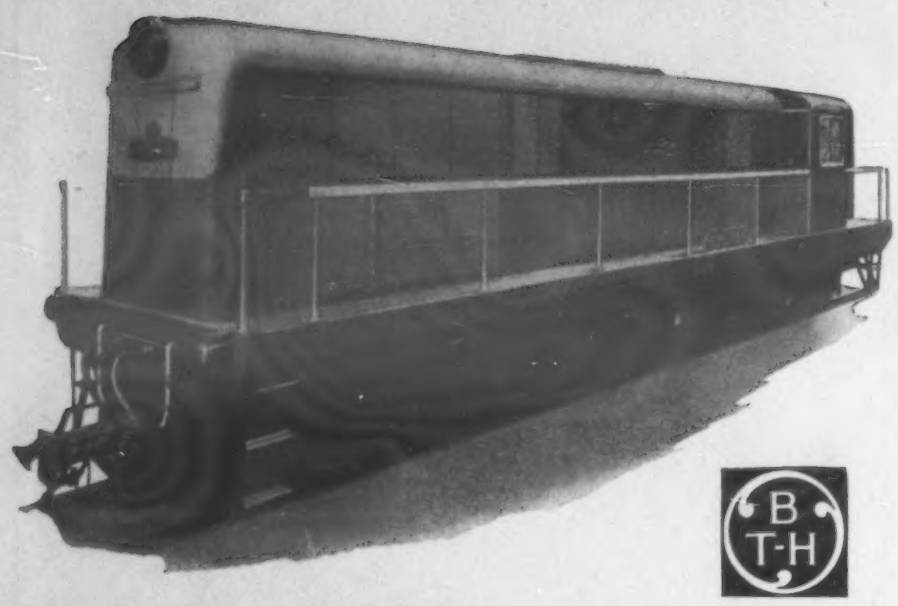
HACKBRIDGE AND HEWITTIC ELECTRIC CO., LIMITED
WALTON-ON-THAMES - SURREY - ENGLAND
Telephone: Walton-on-Thames 760 (8 lines) Telegrams: "Electric, Walton-on-Thames"

Overseas Representatives: ARGENTINA: H. A. Roberts & Cia, S.R.L., Buenos Aires. AUSTRALIA: Hackbridge and Hewittic Electric Co., Ltd., 171 Fitzroy Street, St. Kilda, Victoria; N.S.W., Queensland, W. Australia: Elder Smith & Co., Ltd.; South Australia: Parsons & Robertson, Ltd.; Tasmania: H. M. Bamford & Sons (Pty.), Ltd., Hobart. BELGIUM AND LUXEMBOURG: Pierre Pollie, Brussels, 3. BRAZIL: Oscar G. Mors, São Paulo. BURMA: Neonlite Manufacturing & Trading Co., Ltd., Rangoon. CANADA: Hackbridge and Hewittic Electric Co. of Canada, Ltd., Montreal; The Northern Electric Co., Ltd., Montreal, etc. CEYLON: Envee Ess, Ltd., Colombo. CHILE: Sociedad Importadora del Pacifico, Ltda., Santiago. EAST AFRICA: Gerald Hoe & Co., Nairobi. EGYPT: Giacomo Cohenca Fils, S.A.E., Cairo. FINLAND: Sähkö-ja Koneliike O.Y. Hermes, Helsinki. GHANA, NIGERIA AND SIERRA LEONE: Glyndova, Ltd. GREECE: Charilaos C. Coroneos, Athens. INDIA: Steam and Mining Equipment (India), Private, Ltd., Calcutta; Easun Engineering Co., Ltd., Madras, 1. IRAQ: J. P. Bahoshy Bros., Baghdad. MALAYA, SINGAPORE AND BORNEO: Harper, Gilfillan & Co., Ltd., Kuala Lumpur. NETHERLANDS: J. Kater E.I., Ouderkerk a.d. Amstel. NEW ZEALAND: Richardson, McCabe & Co., Ltd., Wellington, etc. PAKISTAN: The Karachi Radio Co., Karachi, 3. SOUTH AFRICA: Arthur Trevor Williams (Pty.), Ltd., Johannesburg, etc. CENTRAL AFRICAN FEDERATION: Arthur Trevor Williams (Pty.), Ltd., Salisbury. THAILAND: Vichien Phanich Co., Ltd., Bangkok. TRINIDAD AND TOBAGO: Thomas Peake & Co., Port of Spain. TURKEY: Dr. H. Salim Oker, Ankara. U.S.A. Hackbridge and Hewittic Electric Co., Ltd., P.O. Box 234, Pittsburgh 30, Pennsylvania. VENEZUELA: Oficina de Ingeniería Sociedad Anonima, Caracas.

BTH introduce

the diesel-electric

'EXPLORER'



A NEW CLASS OF LOCOMOTIVE
FOR MIXED TRAFFIC DUTY UNDER ARDUOUS CONDITIONS

This is an 1100 h.p. diesel-electric locomotive specially designed to give outstanding service where the going is hard. It is particularly suitable for overseas railways operating in difficult terrain. Maximum power is sustained at sea level in an ambient temperature of 120°F, or up to an altitude of 4,000 ft. at an ambient of 85°F.

Please write for further details of operational performance and full technical data concerning the 'Explorer' class locomotives.

BRITISH THOMSON-HOUSTON

THE BRITISH THOMSON-HOUSTON COMPANY LIMITED · RUGBY · ENGLAND
an AEI Company A5372

The Name Behind
DIESEL RAIL TRACTION
PROGRESS

Announces
GREATER ENGINE POWER
with a new
18 LITRE DIESEL ENGINE

First with Lightweight Diesel Trains incorporating the original 125 b.h.p. diesel power unit, B.U.T. then provided 150 b.h.p. and 200 b.h.p. engines. In 1957 the 230 b.h.p. unit was developed to provide a better power for weight ratio and now even better performance is offered with this 275 b.h.p. engine. In the forefront of rail traction with the improved railcar and railbus power units and controls, B.U.T. confidently forecast greater popularity for this new economical power unit for rail traction.

Engine Type AH 1100
BRIEF SPECIFICATION

NORMALLY ASPIRATED
Max. power—275 b.h.p. at 1,900 r.p.m.
Max. torque—890 lb. ft. at 1,300 r.p.m.

TURBO-CHARGED
Max. power—360 b.h.p. at 1,900 r.p.m.
Max. torque—1170 lb. ft. at 1,200 r.p.m.
Capacity — 1083 cu. in.
Compression ratio 16 to 1

BRITISH UNITED TRACTION LTD
96 PICCADILLY, LONDON, W.1. Telephone: GROsvenor 7121

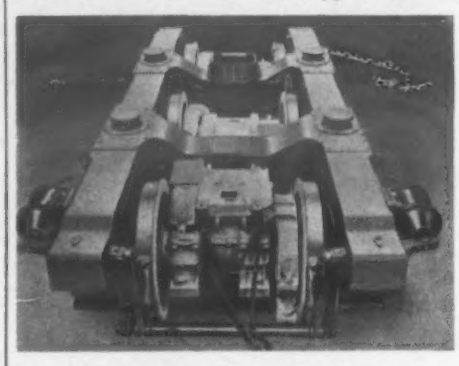
A 1,100-h.p. Diesel for Overseas

(Continued from page 7)

pole, shunt-wound machine suitable for working in conjunction with the automatic voltage regulator. The differential exciter is mounted on the auxiliary generator and is driven by vee belts off a pulley on the generator shaft. It operates in conjunction with the load control unit to regulate the load on the diesel engine. The traction motors are of the box frame type, suspended on the axles, and have a single reduction drive. Their continuous rating is 290 volts and 385 amps at 440 r.p.m.

Bogies and Framing

The underframe is constructed from standard sections and plates, with ample strength to withstand the stresses of normal service condition, and when lifting. The drawgear and brake couplers are fitted to the underframe headstocks. The bogies are interesting in that they are based on features of the well-known French Alsthom type, with which



The motor bogies of Explorer incorporate Alsthom design features

company the British Thomson-Houston Company has an arrangement for exchange of patents. The frames are built up as the simplest possible box section in which the joints are so placed that no welds are subject to high stress.

Each bogie has two rubber pivots on which the body is carried. The pivots are supported on the fixed bolsters on pads of rubber which allow side movement in sheer. In addition the inner pivot assembly on each bogie can slide as a unit on manganese pads to allow the negotiation of tight curves. Four side bearers are provided with coil springs and manganese pads. This arrangement of rubber cone pivots combined with helical side spring bearers gives well damped secondary springing and very good riding qualities. The most important feature of the design is that the overall characteristics of periodicy of body and lateral damping can be adjusted to suit local conditions, by the simple process of changing the side bearer springs and standard shims.

Skefko roller-bearing axleboxes are each carried by two radius arms fitted with Silentbloc bushes and attached to the bogie frame. As well as eliminating horn guide wear, this provides a cushion of lateral resilience, and reduces side blow effect on the track. Over a length of metre-gauge test track which commenced on the straight and then entered a sharp curve, we had an opportunity to observe the remarkable stability imparted by these bogies, and the fine riding qualities of the locomotive.

Auxiliaries

Two motor-driven centrifugal blowers supply the cooling air to the traction motors, one to each bogie, by means of ducts with flexible sections to allow for the movement. Cooling elements for the engine water and oil are made of 10 individual panels, each section is mounted on rubber Silentbloc elements, and the oil and water connections made through flexible pipes. Cooling air is drawn up over the sides of the loco and expelled by two motor-driven fans centrally through the roof. Two compressors are mounted at the free end of the engine, and driven by a shaft extension to one of the crankshafts.

The Westinghouse brake system includes a straight air brake for use when running light or hauling unbraked stock. A vacuum-controlled straight air-brake system is used with vacuum brake trains, in which case two electrically driven exhausters are installed. Automatic air brakes can also be provided when necessary. A handbrake is standard equipment, and this operates on four wheels of the bogie adjacent to the driving cab. Electro-dynamic braking is also provided.

The driving cab has a particularly roomy, attractive and well-appointed layout. It has the usual dual driving stations for left- or right-hand side driving, with dual controls, instruments and alarms. Upholstered seats are provided for each position, and the cab is fully lagged. An engine instrument panel, food, clothing, tool lockers and warming plate for the crew's food are also included. There are two doors set at diagonally opposite corners, giving access to the front and rear platforms. All windows are of safety glass, and windscreen wipers are fitted for each direction of running.

Whilst it would be quite impossible to offer in any single design of locomotive all the requirements to meet the wide variation of conditions on the railways in the territories under consideration, it can be said of this locomotive that it goes a good way towards achieving this ideal, and should provide a ready-made solution to a number of awkward problems.

LETTERS TO THE EDITOR

The Victoria Line

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

Proposed Victoria Line

SIR,—Surely the proposed Victoria Line is already too old-fashioned! It savours of switchback, the 60-year-old C.L.R. and even Stephenson's hill top stations going back a further 80 years. There are to be 20 of them with twice as many transitions. These add to cost in construction, but with only nearly insignificant saving of brake losses in operation. Such losses are likely to be the heaviest ever, because Mr. Valentine promised the Commons increased schedule speed. The 700 miles of subways in New York have no such contraptions to hide the extravagance of electric traction, i.e. its brake losses, besides which that system is the least efficient in plant and power, as set forth in my paper of 1912 on "Intermittency in City and Suburban Passenger Service."

The promotors of our company are willing to provide a new demonstration of our "Never-Stop" system which will prove the feasibility and safety of London passengers stepping on and off the cars at 1¼ m.p.h., having floors and platforms dead level with a 1-in. gap between them. We have always been *"lone"* inventors and designers and for that reason have been excluded from any financial or technical aid from the Government Research Department (1) the Research Development Corporation (2) and the M.E.R.L.—each of which have immense funds at their disposal. Mr. Aubrey Jones, the Minister of Supply, who commands these departments, promised to consider the throwing open of their services and funds to industrial concerns and presumably to their designers and inventors—such as ourselves for instance. So far, however, we have only received two lots of reports from the M.E.R.L.

During the last five years we have re-studied our detail drawings, data, etc., of the Southend and Wembley demonstrations made in 1923-25 and have obtained British patents for certain simplifications and improvements thereof and various other applications, which of course could be at the disposal of the Government. We claim that these achievements (of which the world of the present day knows nothing) can do very much to solve many problems even in the difficult situation in London and elsewhere when an opportunity is given us to disclose and discuss our details with capable and independent parties having the necessary resources to carry out some further exploitation.—Yours faithfully,

WM. YORATH LEWIS,
Managing Director,
Lewis-Adkins, Limited.

17 Woronzow Road,
St. John's Wood, N.W.8.

SIR,—The Victoria Line would obviously stand a better chance of being built if some reduction in the estimated cost of £50 million could be achieved. One thing that is difficult for a layman to understand is the necessity for deep-level tube construction once the Tottenham area is reached. It would seem quite feasible to bring the line to the surface north of Finsbury Park and then construct the remaining section either side of the Midland Region's Kentish Town—Barking line, with a spur to the Chingford branch at Hoe Street, Walthamstow. The surface stations at Harringay Stadium, South Tottenham and Blackhorse Road could be re-sited, if necessary, in accordance with modern traffic requirements; at South Tottenham ample land is available for an exchange station with the Enfield Town branch. A cheaply constructed open-air branch from Blackhorse Road to the ill-served South Chingford area would be possible without a great deal of property demolition; this would increase the usefulness of the new railway and could be built much more economically if it made its junction with the main route on the surface.

I have not read of any investigation into alternative surface routes, but I assume they have been rejected for sound reasons. It would be interesting to know what these reasons are: in particular, why a deep-level tube is required across the open Lea Marshes, beneath an existing railway right of way.—Yours faithfully,

ALAN A. JACKSON.

The Rectory,
Fairfield Grove, S.E.7.

SIR,—If the Victoria Line is so necessary, why is there no direct bus service from Victoria to Kings Cross, other than in the middle of the night? One could easily be run, if London Transport felt like it.—Yours faithfully,

GEORGE BEHREND.

The White House,
Rozel Harbour, Jersey, C.I.

Royal Albert Bridge, Saltash

SIR,—One point in connection with Saltash Bridge (MODERN TRANSPORT, January 24) which may be of interest and not common knowledge, is the rather unique part it might very easily have played during the last war. In 1941-42, when a Nazi invasion of the Devon—Cornwall peninsula was anticipated, due to the dearth of suitable road bridges over the Tamar, this bridge was especially fitted to take heavy army M.T. vehicles.

Road connections were made on to the track at each end of the bridge and sleepers specially shaped to fit into the points, where the double track converged into single track at each of these two ends, the effect being rather that of the pieces of a jigsaw puzzle or crazy pavement.

To cover the possibility of a breakdown of any M.T. vehicle, locomotives were to be stationed at each end of the bridge and special chains were devised to fit a locomotive coupling at one end and an M.T. vehicle at the other, to enable disabled vehicles to be drawn off the bridge if necessary.

All this equipment—sleepers, chains, etc.—was stored under the signalboxes at Saltash and St. Budeaux at each end of the bridge. I was the officer on the spot immediately responsible for all this contraption (from the military side) and have taken many cold walks on the bridge—the last time when the Devon bank was looking very pretty under a blanket of snow, I remember—but I have often wondered how the arrangement would have worked had the emergency arisen. — Yours faithfully,

J. P. BARDSLEY,
Capt. R.E. (Retd.)

Withdean,
Brighton.

MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

TRANSATLANTIC TRAFFIC

Growth Continues Throughout 1958

TRAFFIC on North Atlantic services of the scheduled airlines created a new series of records during 1958, the International Air Transport Association has announced. The total number of passengers carried on the scheduled and charter services of the 17 I.A.T.A. member companies operating between Europe and North America reached a peak figure of 1,292,166—26.8 per cent more than in 1957. Cargo carried during the year increased 20 per cent to a record of 25,014,771 kg. (55,147,202 lb.). Mail carrying economy-class services. Although the economy class was not inaugurated until April 1 of last year, 55.5 per cent of all 1958 scheduled passenger traffic was carried in this new lower-fare service. The airlines completed 331,129 scheduled flights during the year, an increase of 22.1 per cent over 1957; and offered a total of 1,954,292 seats, an increase of 34.7 per cent.

The overall load factor for the year—the percentage of seats taken up—was 61.1 per cent, as compared with the 66.7 per cent load factor of

NORTH ATLANTIC SCHEDULED TRAFFIC*—FOURTH QUARTER—1958

Scheduled flights	Eastbound October	Eastbound November	Eastbound December	Westbound October	Westbound November	Westbound December	Fourth quarter Total	Change over same period 1957 per cent
First	92	84	57	95	83	59	470	
Tourist	2	1	—	2	—	—	5	
Economy	161	34	52	168	36	33	484	
Mixed	961	757	782	954	772	786	5,012	
Cargo	101	104	109	96	111	98	619	
Total	1,317	980	1,000	1,315	1,002	976	6,590	+ 5.6
Seating capacity								
First	18,716	17,059	16,428	18,685	17,312	16,456	104,456	
Tourist	10,804	7,164	5,956	11,424	7,446	5,915	48,709	
Economy	52,278	34,887	37,628	53,191	35,835	37,170	250,989	
Total	81,798	59,060	60,007	83,300	60,593	59,541	404,299	+17.9
Revenue passengers								
First	10,282	9,196	8,469	14,085	10,706	8,082	60,820	
Tourist	5,179	3,037	2,898	8,934	4,984	3,018	28,050	
Economy	18,787	14,634	28,430	38,933	23,259	21,281	140,324	
Total	34,248	26,867	34,797	61,952	38,949	32,381	229,194	+13.8
Per cent seats utilised								
First	54.9	53.9	51.6	75.4	61.8	49.1	58.1	
Tourist	47.9	42.4	48.7	78.2	66.9	51.0	57.6	
Economy	35.9	42.0	62.3	73.2	64.9	57.3	55.0	
Total	41.9	45.5	58.0	74.4	64.3	54.4	56.7	− 2.0
Cargo (kg.)								
Passenger flights	709,744	571,773	611,652	872,079	783,104	751,085	4,299,437	
Cargo flights	468,816	415,475	307,844	431,264	529,433	461,654	2,704,486	
Total	1,178,560	987,248	1,009,496	1,303,343	1,312,537	1,212,739	7,003,923	+23.4
Mail (kg.)								
Passenger flights	409,245	398,483	620,211	353,946	359,066	584,309	2,725,260	
Cargo flights	115,512	125,912	310,815	38,755	44,310	126,808	762,172	
Total	524,757	524,395	931,026	392,701	403,376	711,177	3,487,432	+21.1

*Excluding charters.

increased 16.4 per cent to a total of 10,830,404 kg. (23,876,552 lb.).

In all three categories of traffic the rate of increase during 1958 was greater than 1957. During the latter year, the increases were 22 per cent for passengers; 9.5 per cent for cargo; and 9.9 per cent for mail. According to reports compiled on behalf of carriers by Mr. E. S. Pefanis, secretary of I.A.T.A. Traffic Conference 1 in New York, they carried 1,193,213 passengers on scheduled flights and 98,953 on charters. Scheduled passenger traffic rose 23.2 per cent and charter traffic 95.4 per cent.

Of the scheduled passengers, 255,690 travelled first-class, 274,889 tourist-class and 662,634 1957. Load factors within the three classes of service last year were 56.6 per cent for first class, 61 per cent for tourist, and 63 per cent for economy.

North Atlantic traffic for the last quarter of 1958 totalled 229,194 passengers on scheduled services (up 13.8 per cent over the same period of 1957); 7,003,923 kg. (or 15,440,747 lb.) of cargo (up 23.4 per cent); and 3,487,432 kg. (or 7,688,342 lb.) of mail (up 21.1 per cent). The number of flights increased by 5.6 per cent to 6,590 and available seating capacity rose by 17.9 per cent to 404,299. Of the 229,194 passengers during the last quarter, 60,829 went first class, 28,050 in tourist and 140,324 in economy class.

Aircraft Colour Trials

VISUAL AID TO AIR SAFETY

WITH the aim of making aircraft more conspicuous in flight in order to reduce the risk of mid-air collisions the Ministry of Transport is conducting experiments on its own fleet by painting parts of each aircraft with orange-coloured fluorescent paint. Mr. John Hay, Joint Parliamentary Secretary to the Ministry of Transport, inspected at London Airport a Hunting President aircraft of the Ministry's fleet which was the first twin-engined aircraft to be treated in this way—a de Havilland Dove similarly treated was also visible on the other side of the apron.

Trials with the President have shown that this Day-Glo paint makes the aircraft much more conspicuous against a background of either earth or sky. The scheme consists of using fluorescent paint on nose, airscrew spinners, bands round wing-tips and root-ends, sections of the top and sides of fuselage and part of the fin and tail surfaces. Comparable experiments have been taking place in the United States and, as Mr. Hay remarked, the Civil Aeronautics Authority decided similarly to treat its own aircraft. The Ministry which commenced experiments with its Chipmunks is now painting its aircraft as they come in for check threes or check fours.

Mr. Hay felt that it was important when evolving plans to improve ground installations, to extend radar cover and so forth, not to become so preoccupied with these essential and fascinating projects that they neglected simpler measures that might lie closer to hand. Anything that could be done to make even a small contribution to safety in the air was well worth doing.

Outside controlled airspace, and within controlled airspace in conditions of adequate visibility, it rested upon the pilot to keep a good lookout for other aircraft and to avoid collisions. Anything that could be done, therefore, to make aircraft more conspicuous was likely to be helpful. For that reason the Ministry had recently tried out on one of its civil aviation fleet aircraft at Stansted this experimental livery incorporating orange-coloured fluorescent paint. He thought that the aircraft had been made much more conspicuous, particularly in murky weather both in the air and on the ground. The Ministry owned 15 small aircraft of various types which it used for testing pilots and checking radio aids, and it had decided that they should all be treated in this way as soon as possible. The object had been to design a pattern that did not detract from the general appearance of the aircraft but provided from every aspect a sufficient surface treated with the fluorescent paint. It was hoped that operators would study carefully the results of these experiments.

While the British Overseas Airways Corporation has stated that it is considering the matter, Hunting-Clan Air Transport has decided to go ahead with the use of fluorescent paint and is treating first its Douglas DC6 and Vickers Viscount aircraft. H.C.A. finds that rocket red accords with its present livery.

The Vickers Vanguard taking off last month for its first flight from Weybridge to Wisley. Although fog has interfered with the planned programme, steady progress has none the less been made with flight testing and, indeed, eight flights totalling 10 hr. 45 min. were made in the first nine days

The light, strong, one-piece roof of this clean-looking delivery van is constructed of structural plastics.

One-piece body units reduce the all-up weight of a vehicle with subsequent economy. An interesting example is in the mobile shops built by Smith's Delivery Vehicles Limited of Gateshead-on-Tyne, on Bedford chassis. These have polyester resin/glass fibre roofs not only for weight saving, but also for other important reasons. For instance structural plastics are stronger than steel weight-for-weight, are non-corroding and easy to mould—factors which make for economy in manufacture and operation. Special-purpose vehicle bodies in structural plastics can be laid-up by hand on single moulds. In case of accidental damage, the good appearance of the vehicle can be quickly and cheaply restored. Where cleanliness is paramount, as in these vehicles for food distribution, the "wipe-clean" property of structural plastics is a distinct asset.

Smith's deliver the goods!

with STRUCTURAL PLASTICS roofs for their famous mobile shops.

Simple wooden framework supports the moulds from which the roof of a Smith's mobile shop is produced. Ease of manipulation during the construction process is an important feature when structural plastics are used in vehicle body building.

BEETLE polyester resins B·I·P

B.I.P. CHEMICALS LTD., Oldbury, Birmingham. *Phone:* Broadwell 2061
London Office: 1, Argyll Street, W.1. *Phone:* Gerrard 7971

Giant economy from Dunlop durability

Keep down running costs by choosing your giant tyres from the Dunlop range. There are tyres to meet every type of service condition — each one individually built to give you mileage, safety and dependability.

DUNLOP ROADTRAK MAJOR

The best tyre for on and off the road. Deep, self-cleaning shoulder bars for positive grip on loose, earthy ground, combined with deep ribbed centre tread for long mileage on normal road services.

DUNLOP

BUILT BETTER TO LAST LONGER!

sm/408

ANGLO-CONTINENTAL CONTAINER SERVICES

(LONDON) Ltd. and (BELFAST) Ltd.

House flag flown by ships of A.C.C.S.

● DAILY SAILINGS

* * * *

● ENQUIRIES INVITED

ENGLAND, SCOTLAND & N. IRELAND

Ports of Shipment being: Preston (Lancs.), Larne (Co. Antrim) and Ardrossan (Ayrshire)

BELFAST: 35/9 Middlepath St. Belfast 59261/5
LARNE: (Co. Antrim) Bay Road. Larne 2331/2
PRESTON: (Lancs.) The Dock. Preston 86742/4
MANCHESTER (2): 270/1 Royal Exchange Buildings. Blackfriars 9287/9
BRISTOL (1): 61 Park St. Bristol 25435/6
ARDROSSAN: (Ayrshire) Harbour Street, Ardrossan-Saltcoats 1911/2
GLASGOW (C.2): 10 Bothwell St. City 6997/8
LONDON: (Depot) Elland Rd., S.E.15. New X 4885/7
LONDON: (Offices) 79 Dunton Rd., S.E.1. Bermondsey 4881/4

OFFICIAL NOTICE ANNOUNCEMENTS

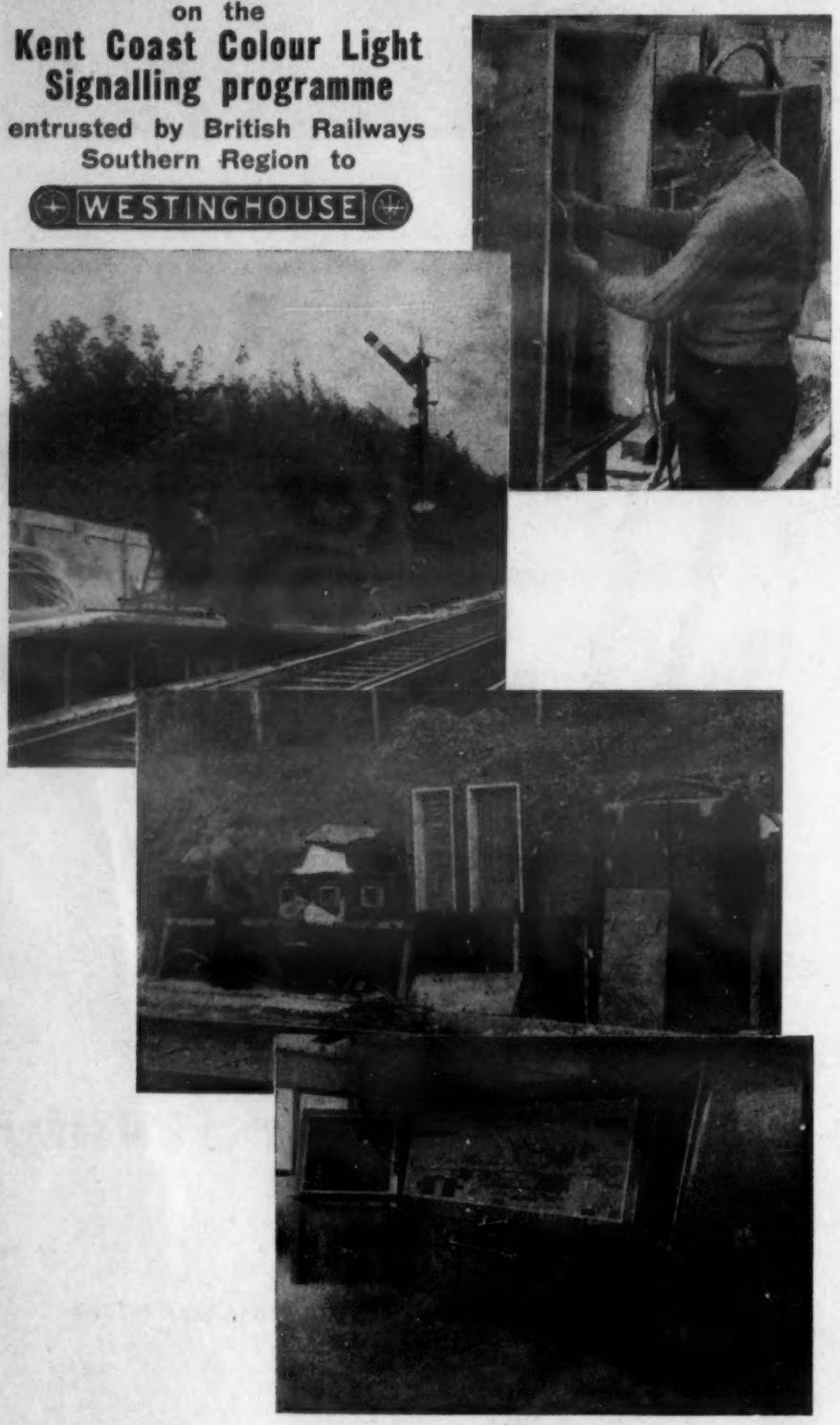
Official Notices, Tenders, and other announcements, can be accepted up to first post Tuesday morning for insertion in the current week's issue.
Rate: 45s. per single column inch.

OFFICIAL NOTICES
MODERN TRANSPORT, 3-16 WOBURN PLACE, LONDON, W.C.1

Men at work

on the
Kent Coast Colour Light Signalling programme
entrusted by British Railways Southern Region to

WESTINGHOUSE



This programme covers the section from Herne Hill to Swanley Junction including the Catford Loop from Cambria Junction to Shortlands, and the Chatham Line from Elmstead Woods to Petts Wood. There are 23 route miles comprising double and quadruple tracks.

There will be new signal boxes with relay interlocking panels at Beckenham Shortlands, and Chislehurst, the latter operating on the Westinghouse O.C.S. system controlling 85 routes.

Westinghouse Brake and Signal Co. Ltd., 82 York Way, London, N.1

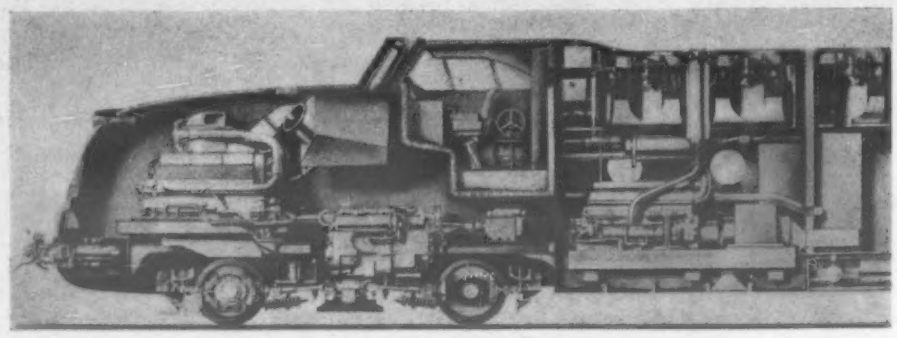
Saxby & Farmer (India) Private Ltd., Calcutta — McKenzie & Holland (Australia) Pty. Ltd., Melbourne
Westinghouse Brake & Signal Co. S.A. (Pty.), Ltd., Johannesburg — *Agents:—Bellamy & Lambie, Johannesburg*

T.E.E. SET AT BRUSSELS

M.A.N. *Success*

AT the World Fair in Brussels in 1958 the T.E.E. power coach, which was developed and built by Maschinenfabrik Augsberg-Nürnberg, was exhibited for the German Federal Railways. In recognition of its exceptional technical achievement, M.A.N. was awarded a grand prix.

This vehicle is of steel and aluminium construction and two identical units are arranged, one at each end of the fully air-conditioned German Trans Europ Express trains which run with five or six trailer coaches between the two power coaches. While the trailer coaches carry the passengers (in saloon coaches, corridor coaches, reclining seat coaches and dining-car with bar), the power coach contains, apart from the diesel-hydraulic traction unit with a nominal rating of 1,100 h.p., a second diesel unit for feeding the auxiliaries, including air-conditioning plant, heating, electrical kitchen appliances, lighting, compressor, etc. Staff rooms for the railway personnel and customs officers and a radio cabin are also included in the power coach. The T.E.E. trains have been operating internationally between Germany and the neighbouring countries since 1957. The German units are finished in the Bundesbahn's rich red livery.

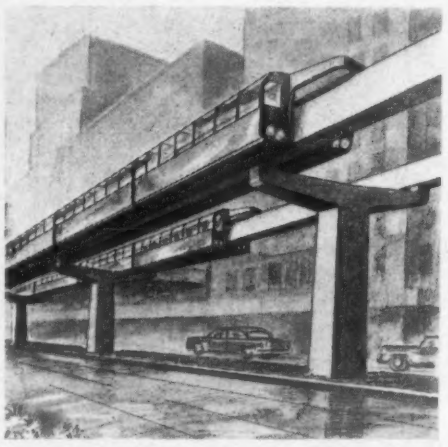


Sectioned view of M.A.N. power unit in German Railways T.E.E. express train, showing 1,100-h.p. diesel engine with hydraulic transmission and behind the driver the auxiliary diesel for air-conditioning, lighting, cooking and heating

Seattle Monorail Proposal

PRELIMINARY details of a streamlined monorail train designed by the Lockheed Aircraft Corporation at the request of the Seattle Transit System were released in the U.S.A. recently. The train would be used during the proposed Century 21 Exposition in Seattle in 1961. Plans now being studied by the exhibition and transit authorities would provide four-car 96-passenger trains of a straddle-rail type between the business-hotel district and the exhibition grounds. The distance of rather more than a mile would be covered in 93 seconds.

The cars would be of inverted U shape, straddling a massive concrete beam raised some 20 ft. above street level. The passenger compartments would extend down the side of each car and be entered from the sides, panels being raised to allow access. Six double seats would be installed in each side section of the cars. The plans make no provision for intercommunication by gangways.



An impression of the Lockheed Aircraft Corporation monorail train proposed for the Century 21 Exposition at Seattle

The conception of the train arose from the desire of the Lockheed Aircraft Corporation to offer air passengers a faster means of travel on the ground, and the design of the monorail train provides unobstructed vision outwards and upwards. The illusion of "flight" which the designers are trying to create is enhanced by the driving compartment, which resembles the nose of an air liner and even has aircraft-type controls and instrument panels. The front ends of the side passenger compartments are made to resemble jet engine air intakes.

The power units—presumably diesel or electric—are mounted in a housing behind the driving compartment and running the length of the cars between the passenger compartments. Like the driving compartment, this power compartment is above the beam itself. The running wheels are in this compartment and run on a single conventional rail mounted on top of the beam. It would seem that some type of stabilising wheel must be fitted to run on the side of the beam, but no details have been announced.

The beam would be supported by T-shaped structures to be built down the middle of Fifth Avenue in Seattle from near Pine Street and Westlake Avenue to the exhibition grounds west of Broad Street. Each arm of the T would support a beam to give inward and outward tracks. At terminals the track would descend to enable passengers to board and alight at ground level.

The proposed system includes automatic block signalling, automatic speed control and breaking, radiant heating, indirect lighting, soundproofing, and built-in public address apparatus. Tracks, supporting structures, stations and foundations would be the responsibility of the Vinnell Company, Inc., Alhambra, California, which is working with the Lockheed company on the development of this monorail system.

REFRESHMENT CARS

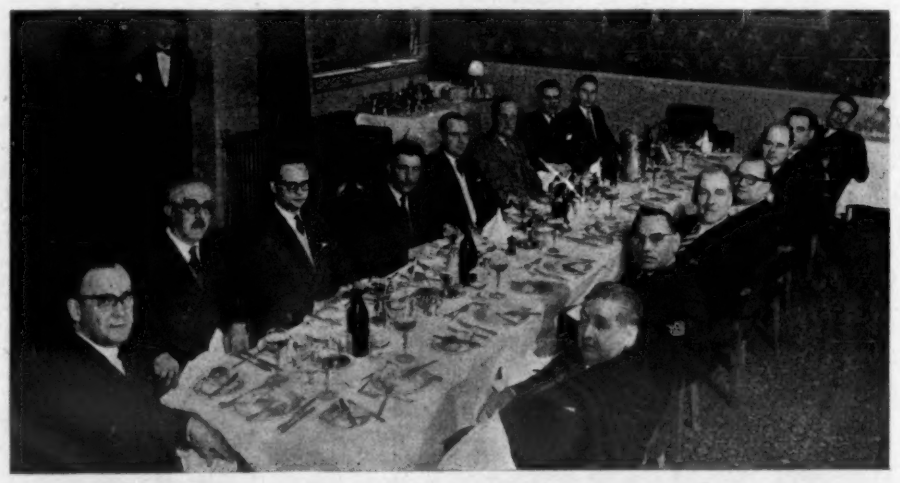
(*Continued from page* 3)

a licensed bar and freshly prepared sandwiches and snacks. Intended for the more lightly loaded runs or to provide a snack bar service on main-line trains in addition to a full restaurant car, the first of these have proved most successful. We believe this design to be unique on the world's railways.

Every Fourth Person

In 1957 the B.T.C. railway refreshment cars served 12 million meals, equal to one to every fourth person out of the whole population of the United Kingdom! The department, whether it is generally recognised by the British public or not, is doing a great service to travellers in this country and, indeed, to the railways themselves, since the presence of refreshment facilities on the train often swings the patronage of the marginal user who might otherwise use road transport. That is why restaurant car results cannot be judged in isolation.

Nevertheless, the management of the B.T.C. Hotels and Catering Division has done a very great deal towards keeping up with what people want and that includes recognising that certain routes or even certain trains do not demand elaborate facilities. The modernisation of the rolling stock has therefore often included a revolution in accommodation so as to cater for the evident cross-section of the public and to do so with a reasonable regard for economy in operation. We are indebted to Mr. F. G. Hole, chairman of the board of management, and Mr. E. K. Portman-Dixon, member responsible for the operation of the cars, for the facilities for assembling much of the information in this review.



Following a tour of the A.E.C. works at Southall and prior to a visit to Park Royal Vehicles, a party of Austrian journalists, escorted by Dr. Josef Tschida, Society of Motor Manufacturers and Traders press representative in Austria, was entertained at luncheon. Mr. Eric Hollands, director and general manager, A.C.V. Sales, Limited, presided, and others present were Mr. J. U. Cooke, export manager, and Mr. S. Spurling, export division, who acted as interpreter, together with Messrs. R. G. Greig and W. M. Hills, of Park Royal

SOCIAL AND PERSONAL

Two B.T.C. Members

THE Minister of Transport is appointing Mr. K. W. C. Grand, at present general manager of the Western Region of British Railways, to be a whole-time member of the British Transport Commission, to fill the vacancy caused by the death of the late Mr. J. W. Watkins. He is also appointing Major-General G. N. Russell, C.B., C.B.E., at present chairman of the board of management of British Road Services, to be a whole-time member in place of Lord Rusholme, who will retire from the Commission on September 30 next.

* * *

Mr. A. C. J. Payne, freight assistant, line traffic manager's office, South Eastern division, Southern Region, has been appointed district traffic superintendent, Southampton, succeeding Mr. W. H. Scutt, retiring.

* * *

The appointment is announced of Mr. J. H. Kirby as managing director of Shell Tankers, Limited, in succession to Mr. A. S. C. Hulton, with effect from March 1. Mr. Hulton will be taking up another position in the Royal Dutch-Shell group of companies. Mr. Kirby joined Shell Petroleum Co., Limited, in 1930. He joined the board of Shell Tankers on the formation of that company in November, 1953. Since July, 1954, he has been deputy managing director to Mr. Hulton. The new deputy managing director is Mr. A. Logan, O.B.E.

* * *

Mr. B. A. Ridley, who has been appointed district manager, London district, B.R.S., was educated at the Merchant Taylors School and, after qualifying as a chartered accountant, joined Carter Paterson and Co., Limited, in 1936 as deputy to secretary and chief accountant. He became assistant to the chief accountant of the Hays Wharf Cartage Co., Limited, and Pickfords, Limited, in 1946, and was appointed divisional accountant of

Mr. B. A. Ridley

the South Eastern Division of British Road Services in 1949. In August, 1955, he moved to the post of accountant, B.R.S. (Parcels), Limited, and acted as deputy to Mr. Claud Barrington, general manager of the company. He was appointed assistant divisional manager, South Eastern Division, in December, 1957.

* * *

We regret to record the death, at the age of 82, of Mr. Harry Austin, a brother of the late Lord Austin. He celebrated his golden jubilee in the motor industry in 1946.

* * *

Mr. S. A. A. Knott resigned his position as secretary of Charles Roberts and Co., Limited, upon his appointment as managing director of S. J. Claye, Limited, industrial bankers, a subsidiary of Charles Roberts. Mr. Leslie Barron, A.C.A., was appointed secretary in his stead.

* * *

Mr. Peter Masefield, managing director of Bristol Aircraft, Limited, Mr. Hugh Astor, and Mr. Percy Hunting, chairman of the Hunting Group, have been appointed members of the council of the Air League. Sir Miles Thomas, chairman of Monsanto Chemicals, Limited, a former member of the council, has accepted an invitation to become a vice-president of the league.

* * *

The Eire Minister for Industry and Commerce has appointed Mr. O'Regan (chairman of Bord Fáilte) to be chairman of the Shannon Free Airport Development Co., Limited. The aims of the new company will be to establish industrial enterprises at the airport, and already many promising industrial activities are about to begin there. Included among the members of the board is Mr. J. Buist Mackenzie, a senior partner of Urwick Orr and Partners, Limited.

* * *

Metropolitan-Vickers Electrical Co., Limited, announces the appointment of Mr. G. R. Higgs, B.Sc., M.I.E.E., M.I.Loco.E., as chief engineer, traction projects department; this appointment will enable Mr. F. Whyman, who relinquishes the position, to devote his full time to his duties as chief engineer, traction division. Mr. J. Beasley, B.Sc.(Hons.), A.M.I.E.E., A.M.Inst.T., is appointed assistant chief engineer, traction control department; he succeeds Mr. A. D. Ferguson, who is appointed consulting engineer, traction control department. Mr. J. L. Russell, A.M.I.E.E., is appointed chief engineer, railway signals department; responsibility for this department is relinquished by Mr. W. T. Gray, chief engineer, traction control department.

* * *

An interesting bus body prototype is recalled with the announcement by London Transport that Mr. A. W. Sainsbury, foreman in the experimental shop at Chiswick works, retired on February 13. Mr. Sainsbury, who had 47 years' service, was concerned in bus development from the L.G.O.C. B-type to the new Routemaster. But the "Sainsbury" body, only one of its kind, was built on a used STL chassis at Chiswick works in 1950 and operated for four years, until mid 1954. This vehicle (STL 2477, illustrated in MODERN TRANSPORT, June 24, 1950) possessed many novel features at the time, designed by Mr. Sainsbury to simplify maintenance. All parts of the body could be quickly detached through the use of bolts or patent Dzus fasteners, particularly those most liable to damage—the rear platform edge, side panels, driving cab and wings.

Permanent Secretary of M.o.T.

THE Minister of Transport, with the approval of the Prime Minister, has appointed Mr. L. J. Dunnett, C.B., C.M.G., to be Permanent Secretary to the Ministry in succession to Sir Gilmour Jenkins, who will retire from the public service on March 31. Mr. L. J. Dunnett entered the Air Ministry in 1936. In 1945 he transferred to the Ministry of Civil Aviation, was at the Ministry of Supply from 1951 to 1958, when he returned to the Ministry of Transport. Sir Gilmour Jenkins was appointed Permanent Secretary in 1947 and, when the department was merged with the Ministry of Civil Aviation in 1953, he became Permanent Secretary to the combined Ministry. From 1941 to 1946 he was Deputy Director General of the Ministry of War Transport and in this capacity had charge of the shipping side of the Ministry.

* * *

Mr. J. B. Allerton has been appointed general sales manager of Renault, Limited, Acton.

* * *

It is announced that Sir William Rootes, who received a hereditary peerage in the New Year Honours, has chosen the title of Baron Rootes, of Ramsbury in the County of Wilts.

* * *

Mr. J. R. Privett has been appointed works manager of the Basingstoke works of Transport Equipment (Thornycroft), Limited. Mr. Privett has been with the company for 13 years.

* * *

Mr. M. R. Bonavia, who has been appointed director of studies at the B.T.C. staff college, Woking, was previously principal officer (modernisation), general manager's office, Eastern Region, British Railways. Mr. Bonavia was educated at St. Paul's School and Corpus Christi College, Cambridge. After business experience in international banking, university financial administration and the steel industry, he joined the former L.N.E.R. as assistant to the chief general manager

Mr. M. R. Bonavia

(public liaison). After nationalisation, he was appointed to the staff of the B.T.C. as assistant secretary (development and works), a post later redesignated as principal works and development officer. In 1951 he accepted a personal invitation from the Gold Coast Government to visit that country and report upon the economics of transport there. In 1953 Mr. Bonavia was appointed chief officer (new works) with the Railway Executive; he continued to hold that post under the Commission, after the abolition of the Railway Executive, until his transfer to the Eastern Region in the above-mentioned post. Mr. Bonavia is the author of *The Economics of Transport*, a standard textbook, and has frequently broadcast and lectured on railway and transport subjects at the University of London.

* * *

The Minister of Transport has accepted the resignation of Mr. M. Arnet Robinson from the Coastal Shipping Advisory Committee, and has appointed in his place Mr. J. R. Turner, director and chief commercial manager of Coast Lines, Limited.

* * *

At the annual general meeting of the Retired Railway Officers' Society at the Great Eastern Hotel on February 10, Mr. A. W. Norman was elected president for 1959. Mr. J. W. Kerr was reappointed hon. secretary and Mr. J. H. Laundy was reappointed hon. treasurer, which position he has filled with distinction for the past seven years.

* * *

Mr. J. C. Clymo, B.Sc.(Econ.), at present Swansea area traffic superintendent with South Wales Transport Co., Limited, has been appointed assistant traffic manager, Trent Motor Traction Co., Limited, and takes up his duties on March 1. He is a B.E.T. trainee and was awarded the Sir William Chamberlain scholarship of the Institute of Transport in 1955, when he made a tour of the United States.

* * *

The titles of the two papers at the Folkestone conference of the Public Transport Association in May are now known. Mr. A. J. White, general manager of Maidstone and District Motor Services, Limited, will read a paper, "Some Contemporary Problems in Bus Operation," and Mr. F. H. Clayton, M.I.Mech.E., deputy general manager of Liverpool Corporation Passenger Transport, will discuss "The Double-Deck Bus, its Operation and Future."

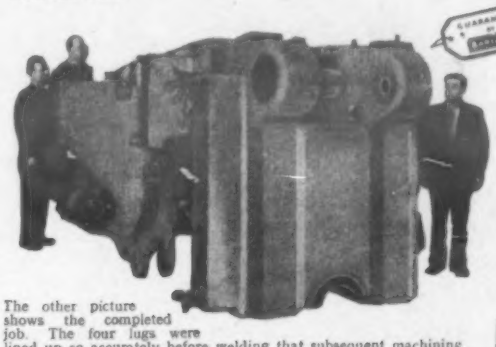
* * *

Over 200 railwaymen, including workshop apprentices, permanent way staff, engine cleaners, porters and clerks, have entered for the 1959 British Railways amateur boxing championships. The competition has begun with eliminating bouts in the London Midland and Scottish Regions, and will be followed by others at Norwich (Eastern Region) and Clapham (Southern Region) on February 19, and at York (North Eastern Region) and Oxford (Western Region) on February 27. The inter-regional rounds will be the quarter finals at Doncaster on March 11, the semi-finals at York on April 10 and the finals at the Royal Albert Hall, London, on April 30. Among the entrants are welter-weight H. Perry of Dublin, the Irish international and Olympic boxer, and lightweight W. Punt of Newport, who was Welsh A.B.A. lightweight champion in 1957. Field Marshal Lord Montgomery has accepted an invitation from Sir Brian Robertson, chairman of the British Transport Commission, to attend the finals and present some of the awards.

A Barimar Achievement "To Crow About!"

Here is a recent repair of which Barimar are mighty proud. It was a scientific welding job in which every moment counted, for many thousands of pounds of productive work for the British Motor Industry was at stake.

The pictures tell a vivid story of the repair of the crown of a mighty power press that stamps out tens of thousands of body panels and other components for the motor industry in Great Britain every year. This press crown weighed twenty tons and the damage that had to be repaired was grievous. The top picture shows two of the four heavy toggle-shaft lugs that were broken right away. The repair of each lug was the kind of poser that Barimar experts delight to tackle and solve.



There were also serious cracks and fractures in the main body of this huge casting and twenty-five feet of cracks and fractures had to be welded in metal up to 7 in. thick. Throughout the job called for superlative welding—Barimar Scientific Welding that stands up to tremendous strain.

The other picture shows the completed job. The four lugs were lined up so accurately before welding that subsequent machining was reduced to a minimum. As the crown was ready for service again within record time, the owners' losses on production were reduced to the lowest possible level. Only Barimar could have tackled an outsize job like this—only Barimar could have returned the repair to the owners with the famous Barimar Money-back Guarantee.

ALL BROKEN PARTS which are transportable must be sent CARRIAGE PAID or delivered to the nearest Barimar Branch. Please remove all fittings, and post letter advising dispatch. When it is impossible to transport the damaged machinery, Barimar experts will operate ON THE SPOT!

BARIMAR LTD.

Telephones: RENown 2147-2148 (Night) 2148

Barimar House, 22-24, Peterborough Road
FULHAM, LONDON, S.W.6

Telegrams: "Bariquamar, Walgreen, London"

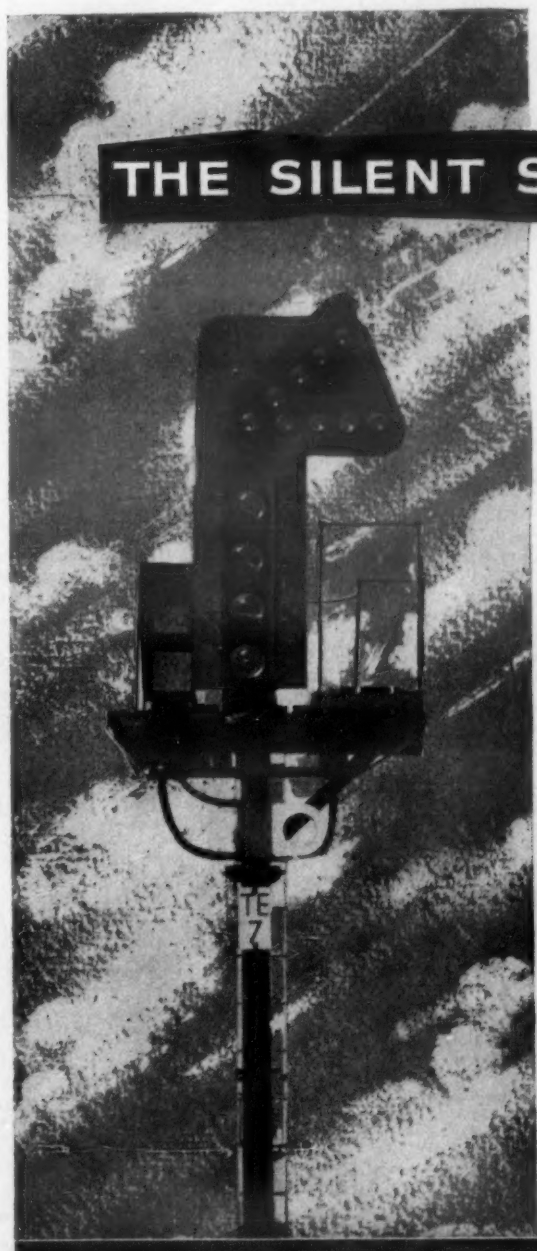
BARIMAR BRANCH ADDRESSES:
BIRMINGHAM, 12: 116-117, Charles Henry St. *Mid. 2696*
MANCHESTER, 13: 67, Brunswick St., Ardwick. *Ard. 2738*
NEWCASTLE UPON TYNE, 1: 64-66, The Close. *Tel. 21055*
GLASGOW, C2.: 134, West George Lane. *Cen. 4709*

MOTOR TRANSPORT REPAIRS

Most Breakages to Motor Parts can be Repaired by Barimar at a Big Saving on the cost of New Parts.

CYLINDER BLOCKS: Every kind of crack and fracture, broken bores, scored bores, damaged stud housings, cracked, burnt, pitted and sunken valve seatings.
CYLINDER HEADS: Broken and cracked heads, cracked and worn valve seats, chipped, warped or damaged faces, broken rocker standards, defective camshaft bearing housings, cracked stud holes, stripped plug threads. IRON OR ALUMINIUM.
CRANKCASES: Fractures caused by broken connecting rods and run big ends, broken-off bearer arms, smashed sumps, cracked stud housings, broken bearing and flywheel housings, stripped drain-plug threads. IRON, ALUMINIUM OR ELEKTRON.
CRANKSHAFTS: Broken across web or journal, cracked, scored, threads stripped, splines or tapers worn.
TRANSMISSION: Cracked or broken gearbox and axle casings, damaged gear teeth, worn splines and tapers, fractured shafts, cracked differential casings.

BARIMAR—The World's Scientific Welding Engineers



ON GUARD... NIGHT & DAY

The railway signals you instal this year will still be working for you in 20 or even 30 years' time, safeguarding the trains and those who travel in them, without cessation.
In all weathers they do their vitally important job, often in smoke laden conditions, and always subject to constant heavy vibration—yet their reliability must never for a single moment be in doubt.
With so much at stake, how right you are, how wise you are, to rely on...

S.G.E. SIGNALS AND ROUTE INDICATORS

SGE

SIEMENS AND GENERAL ELECTRIC RAILWAY SIGNAL CO. LTD.
EAST LANE WEMBLEY MIDDLESEX ENGLAND

IMPORTANT CONTRACTS

L.T.E. Plans Ahead

LAST week London Transport announced the placing of orders to a value of approximately £3,500,000 for the traction motors and other mechanical and electrical equipment needed for the Central Line train renewal programme announced last year. These orders are being placed in advance of the main order for the cars themselves and were provided for as options when contracts were made with certain firms for equipment for new rolling stock for the Piccadilly and Metropolitan Lines last August. At a later stage, after trials of the 12 prototype motor cars ordered recently from Cravens Limited of Sheffield, it is intended to order approximately 330 new cars for the Central Line. These cars will be fitted with the equipment which has just been ordered. The principal contractors for equipment for the Central Line trains are:

Traction control equipment and auxiliary equipment.	British Thomson-Houston Co., Limited.
Traction motors.	General Electric Co., Limited.
Brake equipment and compressors.	Westinghouse Brake and Signal Co., Limited.
Door equipment.	G. D. Peters and Co., Limited.
Automatic couplers and disconnecting units.	A.E.C., Limited.
Auxiliary electrical equipment.	Patent Lighting Co., Limited.
Lighting and auxiliary equipment.	Benjamin Electric, Limited.

In addition, a contract to the value of approximately half a million pounds has been placed with Dialoy, Limited, of Cardiff, for car doors for the new rolling stock for the Piccadilly, Metropolitan and Central Lines.

Tornado Windows for South Africa

An order has been received by Beckett, Laycock and Watkinson, Limited, for 3,953 Beclawat Tornado windows from the Union Carriage and Wagon Company of South Africa. These unit windows are required for 332 carriages for the South African Railways.

Double-Deckers for Bolton

Another 10 Leyland Titan double-deck buses are to be added to the fleet of over 170 similar Leyland buses operated by Bolton Transport Department. The new buses which have been ordered are 27 ft. long PD2.37 models with synchromesh gearboxes and air brakes. Bodies for the buses will be supplied by Metropolitan-Cammell-Weymann, Limited, and will have conventional open-platform rear entrances.

Scottish Region Contracts

Contracts placed by the Scottish Region of British Railways include:

P. Graham and Sons, Perth, for erection of new signalbox, Perth marshalling yard.

Standard Telephones and Cables, Limited, for provision of train describer apparatus, Millerhill marshalling yard, Edinburgh.

Motherwell Bridge and Engineering Co., Limited, provision of four 4,000-gallon oil storage tanks, Haymarket motive power depot, Edinburgh.

In connection with the Glasgow suburban electrification there are:

Standard Telephones and Cables, Limited, for provision of train describer apparatus, Newton.

Ericsson Telephones, Limited, for supply and installation of telephones and associated apparatus, Kelvinhaugh Junction to Airdrie.

Scottish Construction Co., Limited, for supply of prestressed concrete beams and precast concrete units, Hawick Street overbridge (No. 8), Yoker.

W. T. Glover and Co., Limited, for installation of 25-kV gas-filled power cable and associated pilot cable between Parkhead feeder station and Finnieston sub-feeder station and between Finnieston sub-feeder station and Westerton sub-feeder station.

★

TRANSPORT COSTS

(*Continued from page* 11)

of hauling empty wagons and the costs of the provision and maintenance of wagons when they are not under load. These costs are a significant proportion of the total freight costs and the way in which they are distributed may affect materially the figures given to the traffic man and perhaps the rate which he quotes.

Further additions have to be made in arriving at the total transit costs for: (*a*) Administration and general expenses; (*b*) documentation expenses; and (*c*) loss and damage in transit.

Further problems arise in connection with track and signalling. On a heavily used line, these costs are a very clear example of costs joint to a wide range of operations, both freight and passenger. In general we take the view that it is inappropriate to attempt to allocate the track and signalling costs to individual transits or flows of traffic. While statistical formulae can be used to apportion such costs to, for example, particular trains, any such allocations are in essence arbitrary.

Joint Costs

When considering, from a cost point of view, what fares and charges should be made, the best way of looking at joint costs is, I think, to regard them as having to be covered by the contributions which can be obtained from the various traffics which are carried, these contributions being the excess of the gross receipts over the specific costs involved.

It is only for fairly heavy and regular flows of traffics that costing figures of real validity can be computed. The larger the flow, the better the figures. The smaller the flow, the more limited the significance of any figures provided, since the joint costs loom larger at each stage.

Role of Traffic Costing

In the formulation of price policy, both in general and in detail, traffic costing has an important part to play. With the greater freedom of railway freight charging which the Commission now possess and with the coming, I hope, of headroom for passenger fares, permitting flexibility in fare-fixing, there is a great need for railway traffic officers to be supplied with traffic costing advice, as a background to their commercial negotiations and decisions. The figures and information given must be regarded not as facts but as valuable comments on the probable behaviour of costs, under varying conditions and in relation to the traffics concerned. What can be obtained in competitive conditions (the "market") is, however, usually of over-riding importance, certainly in current conditions. Traffic costing advice on the likely level of the competitor's costs may often be helpful.

The costing methods adopted highlight the utilisation obtained from men and equipment in particular circumstances and for particular operations. This is a valuable by-product and sometimes points the way to improvements in operating methods or leads to suggestions as to more advantageous ways of quoting rates for traffic, to secure, for example, bigger consignments or a more regular flow of consignments.

SHIPPING and SHIPBUILDING

Export Smalls Depot Disappoints

BECAUSE of poor patronage the export reception depot at No. 7 shed, Royal Victoria Dock for small consignments (not exceeding one ton) may have to be closed down by the Port of London Authority. The response by shippers has been disappointing, it is stated, and the present volume of goods handled rarely exceeds 80 tons per week. The additional charges made for goods handled through the reception depot were fixed at a low level in order to provide an attractive service to shippers. They range between 5s. per consignment up to and including 10 cwt. and 10s. for a consignment of 20 cwt. The depot was opened in 1953.

Shift Working Proposal in Yard

TO counter the prevailing recession, boilermakers in Tyne and Blyth repair yards, who have banned overtime, are to suggest working a three-shift system to employers. This would absorb rising unemployment and allow the yards to compete on equal terms with Continental rivals.

Oldest Shipping Company Sold

ALL floating assets of Union Steamship, Limited, the oldest shipping company in British Columbia, have been sold to Northland Navigation Co., Limited. The deal includes wharf property on water frontages leased from the Canadian Pacific Railway. Union Steamships, Limited, was owned originally by J. H. Welsford and Company, of Liverpool. The company was started in 1889 and pioneered many new routes in B.C. waters, including the original service between Vancouver and Nanaimo. Northland Navigation operates a fleet of six freighters and passenger vessels to northern ports and to Vancouver Island.

Complete Success of Extinguisher Plant

FROM Rotterdam there was news recently of a dramatic instance of a ship catching fire when in harbour, but being saved, with her cargo, by the operation of her Pyrene-E.D.-Hol inert gas fire-extinguishing installation. The vessel was the m.v. *Ondo*, 9,000 tons, owned by Elder Dempster Lines. The fire, which started in No. 2 hold, was discovered in the early hours. The above installation was put into operation and the affected hold flooded with inert gas. On the following morning the outbreak was finally extinguished and the local fire brigade, wearing breathing apparatus, carried out an inspection of the hold and declared it to be free of fire. Thanks to the promptness with which the installation was operated and the fire-extinguishing properties of the inert gas, the ship's cargo of palm kernels was saved, and was in fact discharged afterwards.

Dublin Employers Defended

A DENIAL has been issued of a statement reported from the last meeting of the Dublin Port and Docks Board (see MODERN TRANSPORT of January 7, 1959) that employers of dock labour in the port of Dublin were not prepared to come to an agreement to find a solution. In negotiations being conducted under the auspices of the Irish Labour Court the employers are represented by the Cross Channel Shipping Association and that body, it is stated, has already indicated to the court the basis on which it was felt the agreement of the unions concerned could be obtained, leading to the withdrawal of the ban on handling of containers. Dublin dockers have rejected the recommendation of the Labour Court that they should handle containers for an experimental period of 12 months. Their decision was taken against the advice of trade union officials who advocated a trial.

Irish Shipping Guarantee

LAST week there was published in Dublin the Irish Shipping Limited Bill, which proposes to increase the present limit of £5 million on the capital of the said company to £12 million. It also increases from £2 million to £5 million the limit on the guarantee by the Minister for Industry and Commerce of the repayment of money borrowed by the company. The power to pay subsidies will be repealed. A recent White Paper on Economic Policy said that the company's current tonnage programmes were now nearing completion.

The next stage of development would require careful consideration in the light of conditions in the shipping industry and of national requirements. The earlier estimate of 250,000 tons deadweight might need revision in view of the greater capacity and efficiency of modern vessels. It was the intention of the Government that Irish Shipping, Limited, should regularly replace older vessels to ensure a modern and efficient fleet, but the recession had reduced its ability to accumulate internal capital resources.

★

FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Dowty Group and Rotol

The Dowty Group has circulated preliminary details of how it proposes to raise £3,500,000 to pay for the intended acquisition of Rotol, Limited, largest propeller manufacturer in the U.K. Shareholders are offered 2,400,000 new 10s. shares as a rights issue for one new share for every two shares held, the price to be decided later. The Group's authorised capital is to be increased by £1 million to £4 million. C.I.C. permission was obtained for these proposals.

Rolls-Royce and Associates

Rolls-Royce, Limited, Vickers, Limited, and Foster-Wheeler, Limited, which have already been co-operating on Britain's first atomic submarine, have now formed a new nuclear power group under the name of Rolls-Royce and Associates. The object of the new company will be the design, development and procurement of nuclear power plant. The establishment of the new company formalises arrangements which already exist between the three companies. The initial capital is £250,000 in £1 shares. Rolls-Royce will have a 52 per cent holding and Vickers and Foster-Wheeler 24 per cent each.

Antofagasta (Chili) and Bolivia Railway

The board of Antofagasta (Chili) and Bolivia Railway has informed the Bolivian Government that the company will suspend operation of its railways in Bolivia from February 18. These railways have suffered big operating losses in Bolivia in the past two years. For 1958 the loss is estimated at £500,000, and for 1959 the indications are that the loss would be half as much again. Although wages and costs have increased, railway tariffs have been frozen since December, 1956. "Unbridled and direct" interference by powerful railway labour unions has resulted in physical violence, expulsion of key British employees, direct instructions to employees in contradiction of orders of the management, and general resistance to the adoption of economy measures. This has made it impossible to run the railways as a commercial enterprise.

The company has already offered, subject to the necessary consents, to sell the railways to the Government on generous terms. No instalment would be required in respect of the first 18 months; and the railways would become the property of the Government on payment of instalments spread over 25 years. No decision has been received so far from the government.

In 1955 G.A. DAY Ltd. wrote—
we now feel that this engine will now complete 400,000 miles before a major overhaul becomes necessary

Here is the Leyland 'Octopus' that has made history by running three-quarters of a million miles before a first major overhaul!

THEY WERE WRONG!

In actual staggering fact, the mileage completed was

750,000

This 'Octopus' started service in February 1950. Working all round the clock, it has done 1,600 miles a week ever since. At the first major overhaul, after 750,000 miles, new cylinder liners were fitted . . . the first liner change! Pistons and rings were replaced . . . only the third set in the engine life. Valve springs and guides were also replaced. The original crankshaft was refitted, the mains being ground .010 undersize; big ends showed no measurable wear. The camshaft assembly only required a new thrust pad. In the gearbox, one new gearwheel and a set of races was the only attention necessary. Generally, oil has been changed and filters cleaned every 3,000 miles, and replacement injectors every 20,000 miles.

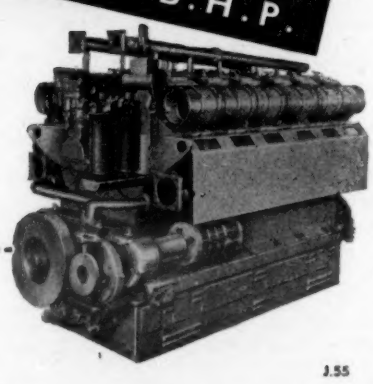
This world-beating record of reliability speaks volumes for the meticulous attention with which the 'Octopus' was maintained by Messrs. G. A. Day, Ltd. . . . and the wonderful design and workmanship that sets Leyland in a class by itself.

Leyland OCTOPUS
FOR FANTASTIC ECONOMY

LEYLAND MOTORS LTD.
Sales Division: HANOVER HOUSE, HANOVER SQUARE, LONDON, W.1. Tel: MAYfair 8561

5 years at John Summers & Sons Ltd

PAXMAN DIESELS
128—2,300 B.H.P.



Paxman engined locomotives first entered service at the Hawarden Bridge Steelworks of John Summers & Sons Ltd., in 1953. Of their present fleet, seven locomotives (diesel-electric, diesel-mechanical and diesel-hydraulic) are powered by Paxman.

DAVEY, PAXMAN & CO. LTD.
COLCHESTER, ENGLAND
a member of the RUSTON Group.

J.55

Printed by Odhams (Watford) Limited, St. Albans Road, Watford, Herts, for and published by, Modern Transport Publishing Co., Limited, Russell Court, 3-16 Woburn Place, London, W.C.1.